ENR

Annual Report
March 31, 1984

Alberta
ENERGY AND NATURAL RESOURCES

85-0457/

Annual Report
March 31, 1984

1984
EDMONTON

Alberta
ENERGY AND NATURAL
RESOURCES

ENR Report No. I/2 - 83/84
International Standard Book Number 0-86499-175-4
International Standard Series Number 0700-2645

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Alberta

ENERGY AND NATURAL RESOURCES

Legislature Building, Edmonton, Alberta, Canada T5K 2B6

October 20, 1984

To His Honor
Frank Lynch-Staunton
Lieutenant Governor of the
Province of Alberta

Sir:

We have the honor to submit the Annual Report of the Department of Energy and Natural Resources for the fiscal year ended March 31, 1984.

Respectfully submitted,

JOHN ZAOZIRNY
Minister of Energy and
Natural Resources

DON SPARROW
Associate Minister of
Public Lands and Wildlife

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Message of the Minister

The year 1983/84 was eventful for Alberta's natural resources industries. While the year was difficult for many sectors of the energy and forest products industries, it witnessed the end of the recession in the United States and the beginning of recovery in many parts of Canada.

In Canada, 1983/84 saw the reassessment and reorientation of priorities and policies for both oil and gas. Some significant modifications were wrought to the National Energy Program (NEP), although industry must still operate under its legacy.

In April, the National Energy Board relaxed its export conditions for crude oil at the urging of the Alberta government. In May, it was announced that transportation of crude oil to the Atlantic provinces would be subsidized. In late June, a federal-provincial agreement to amend the 1981 Energy Pricing and Taxation Agreement ensured that there would be no rollback of conventional oil prices. A significant amount of oil was reclassified so it would receive the New Oil Reference Price (NORP). At the same time, modified fiscal policies for heavy oil and oil sands development were announced by the provincial and federal governments, and United States authorities introduced policies which resulted in increased U.S. demand for heavy oil from Canada.

The combination of these various factors ensured that the shut-in oil problem which affected the industry in 1982 was resolved for most of 1983. There were two firsts: Alberta oil was sold in the Atlantic provinces and Alberta oil was shipped to Japan for the first time. Exports of heavy Alberta crude to the United States increased. Heavy oil and oil sands activity picked up correspondingly. Syncrude confirmed that it would expand its commercial operations, and other experimental projects stepped up their activity. Esso Resources Canada announced its intention to proceed with Phases I and II of the Cold Lake Project. Phases III and IV have subsequently been announced. Amoco Canada Ltd. and BP Resources/Petro-Canada also announced their intention to proceed with commercial development of in situ oil sands recovery projects at Wolf Lake and Elk Point. At the same time, conventional oil exploration activity remained active as new oil plays in several areas developed.

The natural gas industry experienced difficulties in 1983. Gas demand remained soft as the U.S. and Canadian economies attempted to recover from the recession. Canadian gas experienced competition from United States gas production and was affected by the uncertain legislative and regulatory climate in the United States. During the year measures were taken to improve the competitive position of gas and increase sales. In addition, the Government of Alberta agreed to allow for the field extraction of ethane by producers, which may ultimately increase field activity by service and construction crews.

In Canada, as part of the June, 1983, amendment to the Energy Pricing and Taxation Agreement, the Government of Alberta agreed to stabilize prices by foregoing some scheduled price increases to ensure that the price of gas at the Toronto City Gate would not exceed 65 per cent of its BTU parity value for oil. In addition, it was agreed to explore, in consultation with the consuming provinces and industry, incentives to increase the sale of natural gas to industrial gas users. These discussions culminated in the announcement of the Natural Gas Market Incentive Pricing Plan in April, 1984.

Marketing of gas to the United States continues to present a challenge. During 1983, the Government of Alberta was actively involved in the implementation of the natural gas marketing strategy set out in the joint Alberta/industry initiatives paper released in September, 1982. After discussions with the producing provinces and industry, the federal government announced the reduction in the base price of gas from $4.94 U.S. to $4.40 MCF. This was followed by the announcement of a volume-related incentives price (VRIP) in July. Both announcements indicated the willingness of the Canadian industry and governments to remain flexible and adapt to market realities.

The need for market responsiveness was emphasized by the new natural gas import guidelines issued by the U.S. Secretary of Energy in February, 1984. While these new guidelines will not affect contracts currently in place, future export arrangements for Canadian gas will need to be more market oriented and flexible than those of the past. Indeed, it was just such flexibility which was later found in the July, 1984, natural gas export pricing policy that resulted from the work of federal/provincial and industry task forces.

The year 1983/84 was a year of improvement in the drilling, service and geophysical industries. Although the total number of wells drilled declined in comparison with 1982/83, a trend to greater rig utilization was established which has continued into 1984/85. Drilling continued to be concentrated in the development categories rather than exploration. To aid the exploration side of the industry in March, 1984, the Government of Alberta initiated changes to the Exploratory Drilling and Geophysical Incentives Systems. The two main changes to the existing programs were a reduction in payment for reflection seismic work on roads in the Green Area to $300 a kilometre from $700 a kilometre, and introduction of a one-year royalty holiday to a maximum of $1 million

per well for all exploratory oil wells spudded between April 1, 1984, and March 31, 1985. In addition, the five-year royalty holiday on eligible exploratory oil wells and the one-year holiday for eligible gas wildcat wells to a maximum of $2 million per well were renewed for one year.

The results of previous incentives provided under the 1982 Oil and Gas Industry Activity Plan began to be seen in 1983. Additions to Alberta's conventional oil reserves in 1983 exceeded production for the first time since 1969, for a net gain of 60 million barrels. Some of these additions resulted from enhanced recovery programs, and some from new discoveries and extensions. However, market conditions restricted the development of our natural gas reserves, and additions to natural gas reserves did not keep pace with production for the first time since 1975, resulting in a slight decrease in reserves.

We have seen in 1983 the critically-important reversal of the downward trend of both attitude and investment of our Alberta-based energy industry and the beginning of a gradual but distinct upward movement. This improvement has been achieved notwithstanding the fact that the energy industry still labors under the shackles of the NEP. This progress is a tribute to the resourcefulness and determination of the people of Western Canada.

The forest industry in Alberta showed signs of recovery during 1983/84 from previously-depressed lumber markets caused by the North American economic recession. In 1983, the Alberta sawmill industry reached a record production level of one billion board feet of lumber. The timber salvage incentive program, which concluded at the end of 1983, provided significant assistance to the industry in achieving this record production level.

During 1983, the province had minimal timber losses from forest fires. These minimal losses were partially due to a number of new initiatives in the fire management program, including a highly sophisticated, province-wide lightning detection system and a more effective initial attack system.

In October, 1983, an oriented strand board plant, which uses aspen as a fibre source, was opened in Edson. Alberta's forests contain a significant amount of aspen timber and very little of it is being utilized. The harvesting of this under-utilized resource and its conversion into a highly acceptable product is of major significance to the future of Alberta's forest industry.

The Pine Ridge Forest Nursery had its biggest year to date, shipping in excess of 32 million seedlings. The nursery is funded through the Alberta Heritage Savings Trust Fund and is one of the most advanced facilities of its kind in North America.

Alberta's forest industry was affected by depressed markets during the past year but the future prospects for the industry are very promising. With less than 50 per cent of our total timber resources committed to development at the present time, Alberta's long-term opportunities to expand to meet future world demand are highly favorable.

The achievements of 1983/84 in both the energy and forest product industries speak well for continued improvement through 1984/85. Alberta's rich endowment of natural resources can continue to be the basis of a strong and vibrant economy.

Message of the Associate Minister

Three significant objectives relating to the administration of the department were introduced during the last year. They are: deregulation and simplification of legislation and procedures; a more efficient utilization of budgetary and staff resources while at the same time maintaining, and in some cases increasing, service and benefits to the public; and privatization of some departmental activities which can be better undertaken by the private sector. These are long-term objectives which will be in place for the next several years. The dedicated staff in the department have taken up the challenge contained in these objectives and their creativity and innovation will result in a more efficient and responsive administrative structure.

Agricultural crop land continued to be in high demand and more than 220 000 acres of public land was made available to new and expanding farmers. The total acreage of new grazing leases issued during the past year showed a substantial increase of 36 per cent. The Grazing Reserve Development Program, funded from the Alberta Heritage Savings Trust Fund, continued to develop needed pasture land in the province in order to diversify and stabilize the agricultural industry. Efforts were also taken to increase the utilization of these grazing reserves while at the same time decreasing operating costs.

The implementation of the Fish and Wildlife Policy for Alberta continued during the last year with a major effort being directed toward the preparation of a new Wildlife Act. A draft status report on fish and wildlife resources in the province was prepared and work was commenced on a number of specific policy papers which will address a variety of wildlife and fisheries issues. The role of the Fish and Wildlife Public Advisory Council was broadened and strengthened during the past year. The council was actively involved in reviewing policy proposals, regulations and legislation as well as a variety of operational issues.

Construction began in 1983 on a new fish hatchery at Cold Lake in order to meet the increasing public demand on Alberta's fish population. The hatchery will significantly increase trout production and will also produce the necessary stocks to undertake a major pickerel enhancement program in the province. A trout rearing facility at Allison Creek in the Crowsnest Pass was completed and this will also contribute significantly to fish production in the province. In the area of commercial fishing, a freight subsidy program was introduced and revisions to the licensing and marketing systems were initiated.

Fish and wildlife habitat development and enhancement activities continued to receive a high priority during the last year. A wide variety of projects was funded under the Buck for Wildlife program and under the Wetlands for Tomorrow program in conjunction with Ducks Unlimited Canada.

To realize the maximum benefits from the province's public lands and natural resources, the integrated resource information and planning programs continued at an active pace during 1983/84. Twelve major integrated resource plans were in various stages of development and they will all undergo a comprehensive public review. These plans will identify significant economic development opportunities, including major areas for agricultural expansion, commercial tourism and recreation development.

Work continued on the development of a major, computer-assisted 1:20 000 provincial base mapping program. This program is being undertaken almost entirely by private sector firms, thereby helping to maintain and further advance Alberta's leading role in this high technology area.

The initiatives and objectives which have been implemented during 1983/84 are consistent with our strong commitment to the wise and efficient management of Alberta's renewable resources for present and future generations. We have met the challenges of the past year and are poised to meet new challenges in the future which will inevitably result from increasing competition and demands on our resources.

The Department

The ministry is responsible for the administration, management and planning of Alberta's energy and natural resources: energy, minerals, forests, public lands, and fish and wildlife.

These responsibilities include advice to the minister and associate minister on policies and programs of energy and renewable resources, two of the three sectors of the department.

The Energy Resources Sector applies sound management practices to ensure the largest and most efficient recovery of a depleting resource as well as maximum royalty revenues for the province.

The Renewable Resources Sector is charged with the efficient development and planned reforestation of Alberta's forests, the management of public lands, and the management of the fish and wildlife resources for the continued benefit of the province.

The third sector, Finance and General Administration, provides support and administrative services to the ministry.

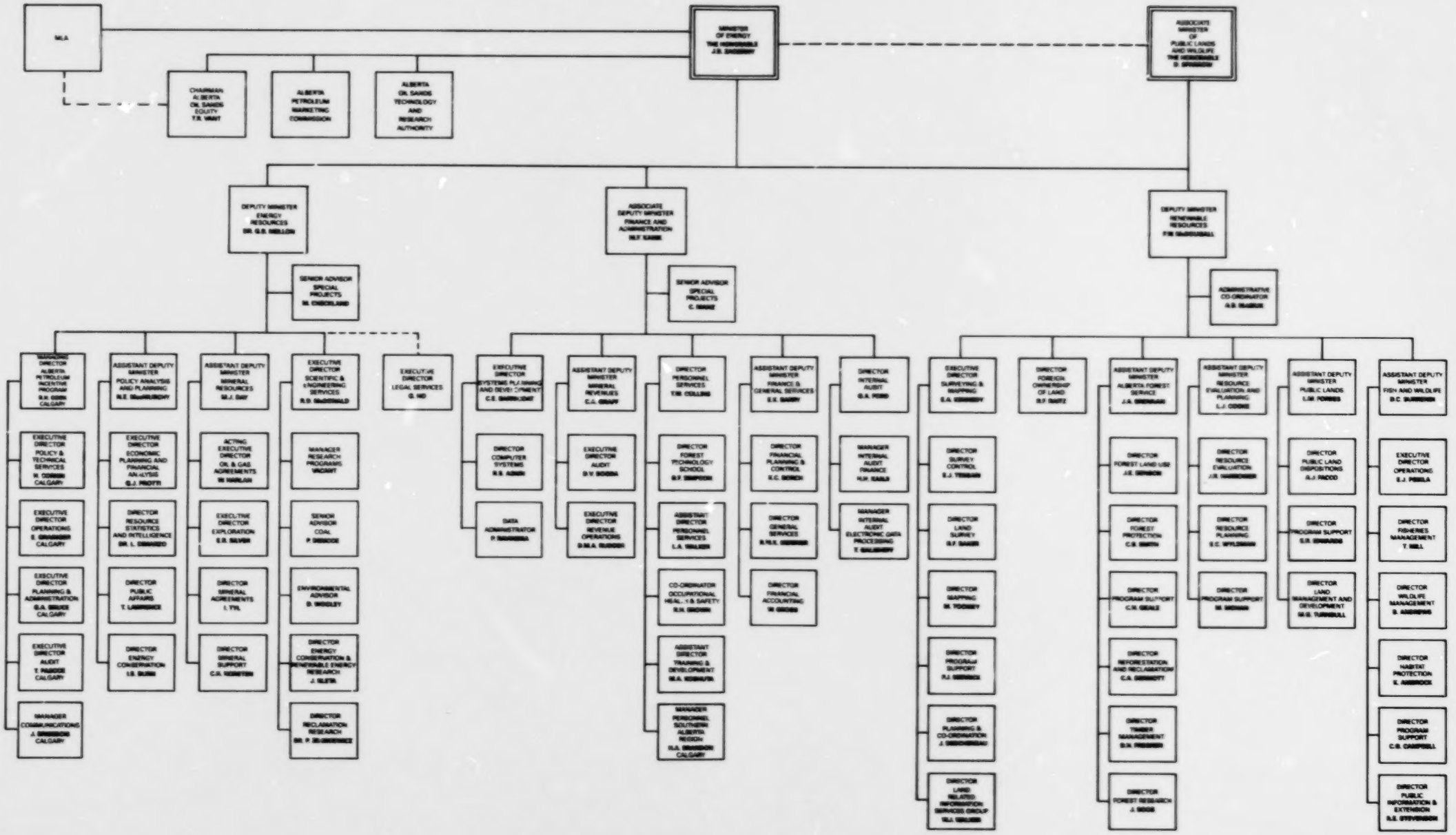
The department organization is shown through the organization chart (Figure 1). There are 16 divisions reporting to two deputy ministers and one associate deputy minister. There were 2 605 authorized permanent positions on March 31, 1984. The total 1983/84 expenditure authority was $499 million.

Alberta Oil Sands Equity, Alberta Oil Sands Technology Research Authority and the Alberta Petroleum Marketing Commission report directly to the minister. Alberta Oil Sands Equity's activities are reported through the annual report of Energy and Natural Resources while the latter two report their activities to the minister through separate annual reports.

Figure 1
Organization Chart
March 31, 1984

Alberta Energy & Natural Resources
Organization Chart

March 31, 1984


MLA
CHAIRMAN ALBERTA OIL SANDS EQUITY T.R. VAAT
ALBERTA PETROLEUM MARKETING COMMISSION
ALBERTA OIL SANDS TECHNOLOGY AND RESEARCH AUTHORITY
MINISTER OF ENERGY THE HONOURABLE J.D. SHEEHY
ASSOCIATE MINISTER OF PUBLIC LANDS AND WILDLIFE THE HONOURABLE D. SPARROW
DEPUTY MINISTER ENERGY RESOURCES DR. G.B. HELLON
ASSOCIATE DEPUTY MINISTER FINANCE AND ADMINISTRATION M.F. KAINE
DEPUTY MINISTER RENEWABLE RESOURCES F.W. TAUDEVALL
SENIOR ADVISOR SPECIAL PROJECTS M. CHECKLAND
SENIOR ADVISOR SPECIAL PROJECTS C. SHAW
ADMINISTRATIVE CO-ORDINATOR G.S. MacNEIL
EXECUTIVE DIRECTOR ALBERTA PETROLEUM INCENTIVE PROGRAM R.H. OSEN CALGARY
ASSISTANT DEPUTY MINISTER POLICY ANALYSIS AND PLANNING M.E. MacHARDY
ASSISTANT DEPUTY MINISTER MINERAL RESOURCES M.J. DAY
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EXECUTIVE DIRECTOR LEGAL SERVICES G. HO
EXECUTIVE DIRECTOR SYSTEMS PLANNING AND DEVELOPMENT C.E. SHERWOOD
ASSISTANT DEPUTY MINISTER MINERAL REVENUES C.A. GRAPP
DIRECTOR PERSONNEL SERVICES T.M. COLLINS
ASSISTANT DEPUTY MINISTER FINANCE & GENERAL SERVICES E.E. BARRY
DIRECTOR INTERNAL AUDIT G.A. FORD
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DIRECTOR FOREIGN OWNERSHIP OF LAND R.F. HAITZ
ASSISTANT DEPUTY MINISTER ALBERTA FOREST SERVICE J.A. STEPHAN
ASSISTANT DEPUTY MINISTER RESOURCE EVALUATION AND PLANNING L.J. ODONE
ASSISTANT DEPUTY MINISTER PUBLIC LANDS I.M. FORBES
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DIRECTOR COMPUTER SYSTEMS R.S. ADAIR
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DIRECTOR FOREST TECHNOLOGY SCHOOL B.F. SIMPSON
DIRECTOR FINANCIAL PLANNING & CONTROL R.C. BERCH
MANAGER INTERNAL AUDIT FINANCE H.H. EARLE
DIRECTOR SURVEY CONTROL E.J. TESSARI
DIRECTOR FOREST LAND USE J.E. DENSON
DIRECTOR RESOURCE EVALUATION J.R. HARBOWER
DIRECTOR PUBLIC LAND DISPOSITIONS A.J. RICCO
EXECUTIVE DIRECTOR OPERATIONS E.J. PEMLA
EXECUTIVE DIRECTOR OPERATIONS E. GRABOSKI CALGARY
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EXECUTIVE DIRECTOR EXPLORATION S.S. SILVER
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MANAGER INTERNAL AUDIT ELECTRONIC DATA PROCESSING T. GALLOWAY
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DIRECTOR PROGRAM SUPPORT C.R. GEALE
DIRECTOR RESOURCE PLANNING E.C. SPELLMAN
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DIRECTOR WILDLIFE MANAGEMENT B. ANDREWS
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DIRECTOR REFORESTATION AND RECLAMATION C.A. DENNETT
DIRECTOR TIMBER MANAGEMENT B.M. FREEMAN
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DIRECTOR PROGRAM SUPPORT S.R. EDWARDS
DIRECTOR LAND MANAGEMENT AND DEVELOPMENT M.G. TURNBULL
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DIRECTOR PUBLIC INFORMATION & EXTENSION R.E. STEVENSON

1

Energy Sector

Report of the Deputy Minister

G. B. Mellon, Deputy Minister, Energy Resources
M. J. Day, Assistant Deputy Minister, Mineral Resources
N. E. MacMurchy, Assistant Deputy Minister, Policy Analysis and Planning
R. D. McDonald, Executive Director, Scientific and Engineering Services
T. R. Vant, Chairman, Alberta Oil Sands Equity
R. H. Cook, Managing Director, Alberta Petroleum Incentive Program

Since 1930, the Canadian Constitution has conferred the responsibility for natural resource development in the province upon the Government of Alberta. This responsibility was reaffirmed in the 1982 constitutional amendments which clarified provincial ownership of the Crown's resources and the government's responsibility for managing the renewable and non-renewable natural resources of the province.

The mandate for management, development and disposition of Alberta energy resources has been vested in the Department of Energy and Natural Resources. The Energy Sector applies sound management practices to encourage participation by the private sector in the development of a depleting resource as well as maximum royalty revenue for the province.

The Energy Sector administers a number of acts which govern the development of the province's energy resources, including:

- Mines and Minerals Act
- Natural Gas Price Administration Act
- Natural Gas Pricing Agreement Act
- Mineral Titles Redemption Act
- Alberta Petroleum Incentives Program Act

To fulfil its responsibilities, the Energy Resources Sector of the department is organized into four divisions: Mineral Resources, Policy Analysis and Planning, Scientific and Engineering Services, and the Alberta Petroleum Incentives Program administration. In addition, the sector contains the Legal Services Division which provides legal support to all areas of the department.

The annual report for Alberta Oil Sands Equity has been included with the Energy Sector.

Mineral Resources Division

Mineral Resources Division is responsible for formulating mineral resource policy, recommending legislation and exercising ministerial discretion in the administration of all aspects of the Mines and Minerals Act and regulations other than those dealing with royalty and marketing. The minerals owned by the Crown in right of Alberta which are administered include coal, natural gas, oil sands, petroleum and a wide range of evaporitic, industrial and metallic minerals, but exclude sand, gravel, clay, marl, and peat that can be stripped, which are managed by the Public Lands Division.

Major management aspects include the disposition processes for mineral rights and the maintenance of dispositions, most of which are subject to complex tenure requirements. As a key component of these processes, the division continued its involvement during the year in land-use planning and conflict resolution, with the object of encouraging non-renewable resource exploration and development where compatible with other land uses and the environment. The division also processes requests for removal of natural gas from the province.

In addition to minerals management, the division reviews, co-ordinates and issues approvals for mineral exploration activity by industry. (A field staff of exploration inspectors is responsible for investigating complaints arising from exploration activity and for recommending remedial action.)

The division has an extensive involvement with the mineral industry and widely distributes mineral-related data and information. Mapping, drafting and computer services are directly provided for government-wide use and sold to non-government agencies at a nominal fee.

The division issues and maintains the agreements which convey the Crown's oil, gas and other mineral rights, for which 52 439 were active at year end (Figures 2 - 3).

Oil and gas agreement sales of undisposed petroleum and natural gas rights by lease or licence are managed in such a manner as to ensure that the private sector will continue exploration work in the form of drilling. The practice of holding public offerings in Calgary was continued and 25 offerings were held. Bonus consideration from the sale of 1.35 million hectares of petroleum and natural gas leases and licences amounted to $485.2 million, up 44 per cent

Figure 2

Mineral Exploratory Agreements

Number, Hectares

Type	Active March 31/83	Issued	Cancelled	Active March 31/84
Natural gas licences	**4**	—	**4**	—
	19 968	—	19 968	—
Oil sands prospecting permits	**15**	**3**	**11**	**7**
	86 944	6 272	63 968	29 248
Quartz exploration permits	**2**	—	**1**	**1**
	5 120	—	1 152	3 968
Petroleum and natural gas licences	**2 247**	**524**	**624**	**2 147**
	4 744 445	785 618	1 480 324	4 049 739
Total	**2 268**	**527**	**640**	**2 155**
	4 856 477	791 890	1 565 412	4 082 955

SOURCE: Mineral Resources Division

Figure 3

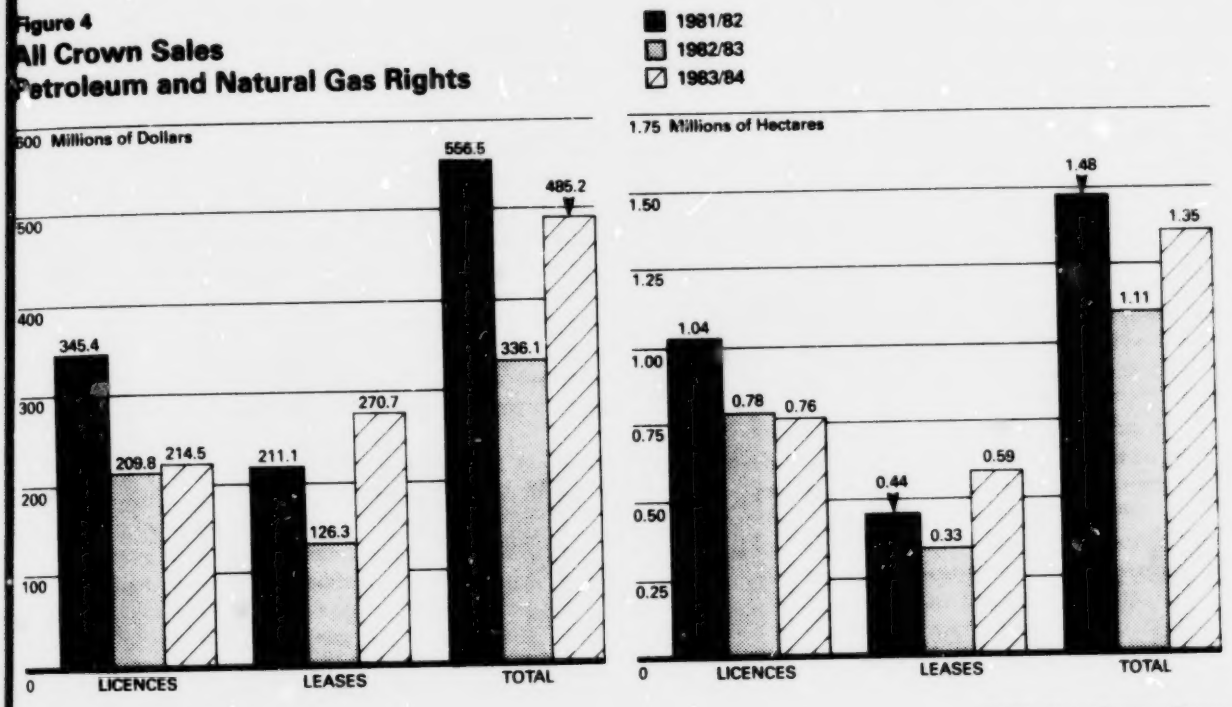
Mineral Development Agreements

Number, Hectares

Type	Active March 31/83	Issued	Cancelled	Active March 31/84
Petroleum and natural gas (P&NG)	**44 904**	**3 999**	**4 520**	**44 383**
	22 491 360	1 799 515	2 896 882	21 393 993
Natural gas	**2 096**	**20**	**16**	**2 100**
	3 564 328	29 312	78 004	3 515 636
Petroleum	**27**	—	—	**27**
	20 115	—	—	20 115
Other (P&NG) agreements	**6**	—	—	**6**
	491 509	—	351	491 158
Bituminous sands	**14**	—	**2**	**12**
	109 348	—	39 907	69 441
Oil sands	**228**	**18**	**2**	**244**
	2 410 844	182 902	74 532	2 519 214
Coal	**3 217**	**12**	**298**	**2 931**
	1 726 894	2 624	243 813	1 485 705
Road allowance coal	**453**	**17**	**22**	**448**
Quarriable mineral	**91**	**7**	**8**	**90**
	9 415	590	824	9 181
Salt	**5**	**2**	—	**7**
	1 146	1 256	—	2 402
Iron	**2**	—	**2**	—
	3 962	—	3 962	—
Sodium sulphate	**2**	—	—	**2**
	863	—	—	863
Quartz mineral	**19**	—	**12**	**7**
	69 870	—	60 331	9 539
Placer mineral	**10**	**1**	—	**11**
	2 402	16	—	2 418
Special mineral	**15**	**1**	—	**16**
	2 357	77	—	2 434
Total	**51 089**	**4 077**	**4 882**	**50 284**
	30 504 413	2 016 292	3 398 606	29 522 099

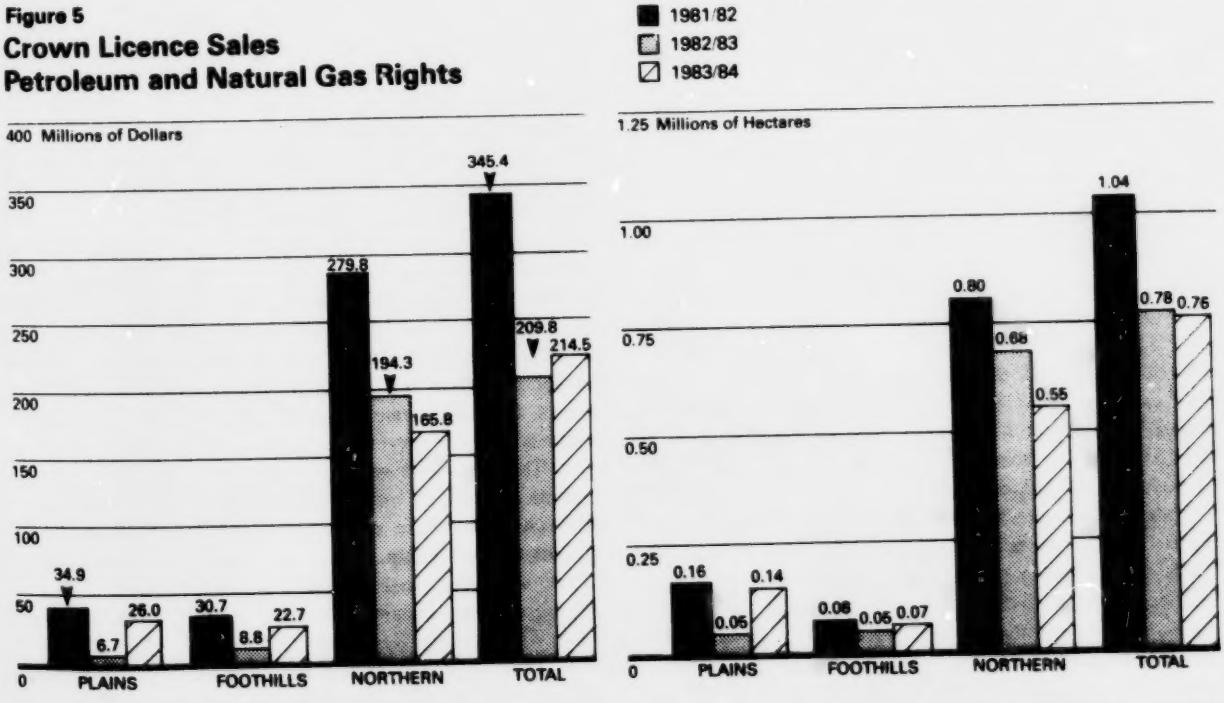
SOURCE: Mineral Resources Division

Figure 4
All Crown Sales
Petroleum and Natural Gas Rights



SOURCE: Mineral Resources Division

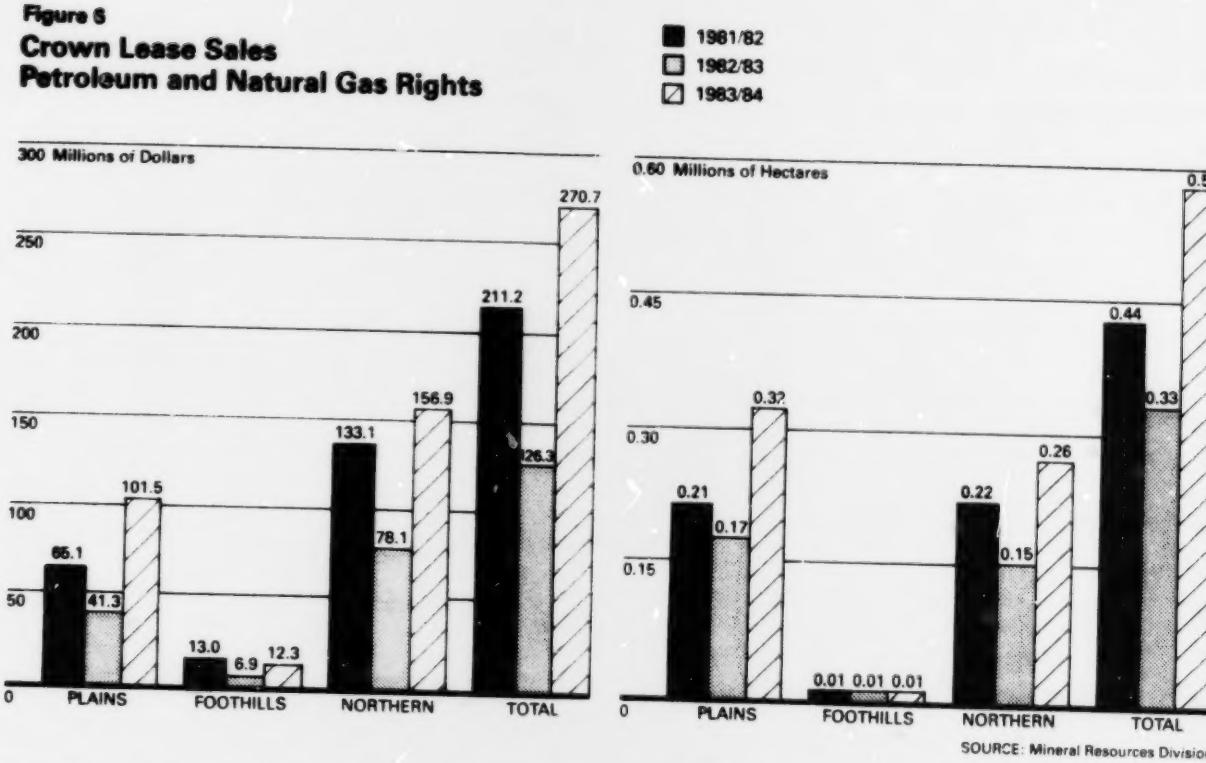
Figure 5
Crown Licence Sales
Petroleum and Natural Gas Rights



SOURCE: Mineral Resources Division

Figure 5

Crown Lease Sales
Petroleum and Natural Gas Rights



SOURCE: Mineral Resources Division

from the previous year (Figures 4 - 6). The deeper oil and gas rights became available as a result of legislation that took effect January 1, 1983. These rights garnered 28.6 per cent of the bonus monies received while comprising 20 per cent of the area offered.

Active oil and gas agreements numbered 48 663 at year end. Those currently being issued include exploration licences and five-year term leases of petroleum and natural gas rights, under legislation which became effective July 1, 1976. Those being administered also include the earlier form of 10- and 21-year-term petroleum and natural gas leases and 21-year-term natural gas leases.

Ten-year petroleum and natural gas leases which reached the end of the sixth year of their terms during the fiscal year, and on which a well had not been drilled, are subject to statutory drilling requirements. This drilling requirement was extended on 2 398 leases by payment of $12 444 000.

Substantial discretionary authority is exercised in regard to the continuation of petroleum and natural gas leases, necessitating geological, geophysical and engineering input from and liaison with the Energy Resources Conservation Board (through the department's senior technical advisor geology, in Calgary) and the lessee. A total of 7 278 individual petroleum and natural gas leases whose terms of five, 10 and 21 years expired were reviewed to determine whether they qualified for continuation. Of the total, 2 873 leases were continued by reason of established productivity. A further 586 leases or portions of leases considered to be probably productive but unproven were continued for a further year, after payment of the $25 per hectare security required for the portion continued. The remainder expired. The return or refund of the security is contingent upon a well being drilled on each such lease to determine whether or not it is underlain by a productive oil or gas pool. Of the 382 leases continued as unproven areas for a further one-year period during the preceding fiscal year, 244 were continued as productive, 122 cancelled, and 16 continued for a further period of one year. During the fiscal year 74 notices to demonstrate leases or portions thereof to be productive were served to Crown lessees.

The division's responsibilities, in regard to unit agreements, are to ensure that the terms and conditions of Crown leases are not negated and, where diversity of mineral ownership exists, to further ensure that the Crown's royalty participation is equitable. Twelve new unit agreements became effective, three existing unitized areas were enlarged and one unit was terminated.

There were no public offerings of coal rights for sale because of the impending revision of the 1976 Coal Development Policy for Alberta, but the division

continued to issue Crown coal leases and Crown coal road allowance leases within existing or newly-approved mine permits and mine licences. Seventy-five coal agreements were issued and 26 were renewed.

Alberta's coal industry has been affected by a downturn in the coal export market, prompting lessees to reassess their coal lease holding, resulting in the surrender of 192 coal leases to the Crown. This trend showed in decreased coal rental payments from $4.3 million to $3.6 million. The decreased activity of the coal industry has also been reflected in lowered coal exploration. Only 350 drill holes were drilled compared with 960 in the previous fiscal year. A total of $104 817 in refundable work deposits received from previous sales of coal leases was returned against eligible exploration expenses by coal lessees.

Mineral Revenues and Mineral Resources divisions are responsible for the administration of the Mineral Rights Compensation Regulations. Thirteen new compensation applications were received and eight were pending from the previous period. Three claims (for 10 coal leases involving 8 776 hectares and for two quarriable leases with 215 hectares) were settled and $732 999 was paid the lessees as compensation.

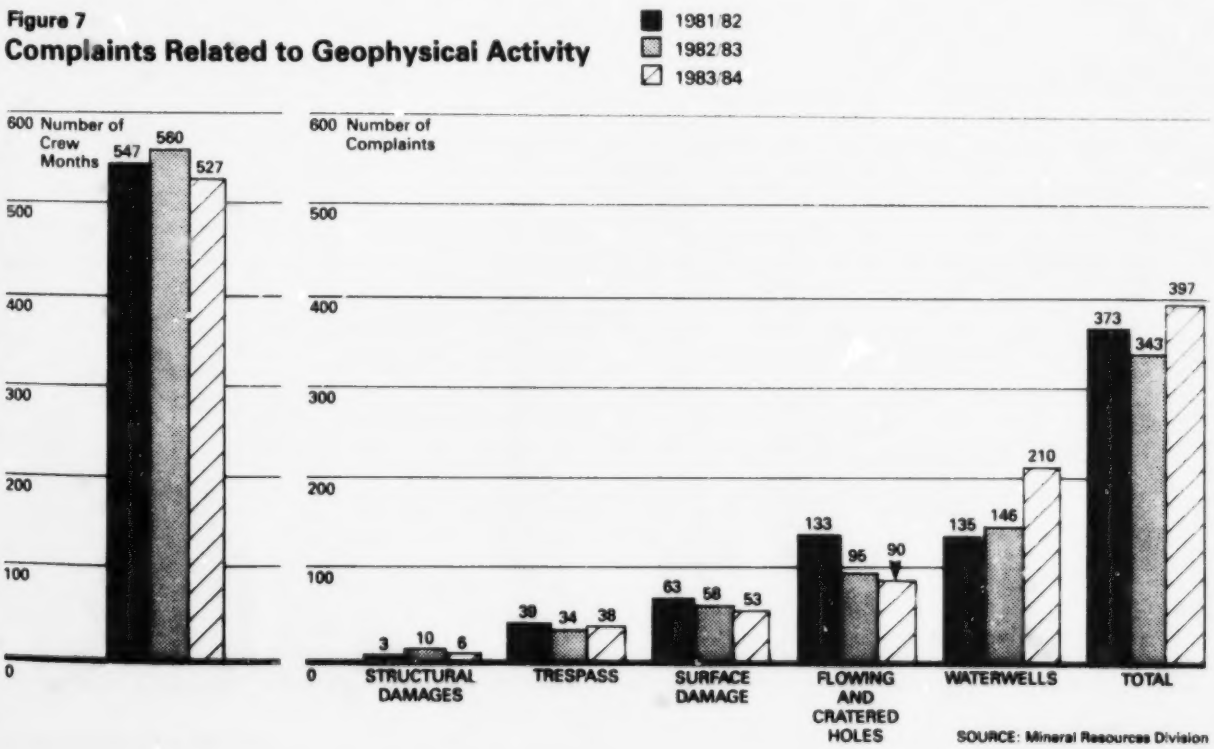
The increased interest in oil sands development by the oil sands industry was reflected in several new commercial projects and continuing field testing of new technology at a steady pace. Nine oil sands lease applications were processed and one bituminous sands lease was renewed as an oil sands lease. Two new oil sands prospecting permits were issued and three were renewed. Two of the renewed permits were consolidated into a single agreement.

There was continued interest in Crown quarriable minerals rights. Two new leases were issued and five surrendered.

Steady gold prices resulted in increased interest in placer mineral rights. The division issued 220 placer mining permits and one placer mining lease. The lease was issued on a location co-existent with a sand and gravel deposit.

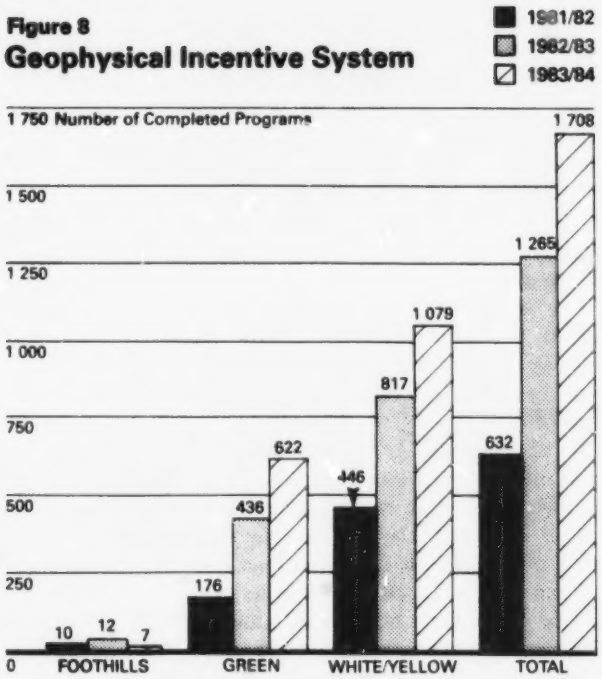
A field staff of eight exploration inspectors is responsible for investigating complaints claimed to be attributable to exploration activity in the settled portions of the province. The staff is also responsible for recommending remedial action and penalties to operators of exploration equipment found to be in contravention of the Exploration Regulation. Landowner complaints increased 13 per cent from the previous year although geophysical activity, as measured by crew months, decreased approximately six per cent (Figure 7). Of the 397 complaints received, 328 were resolved at fiscal year end.

Figure 7
Complaints Related to Geophysical Activity



SOURCE: Mineral Resources Division

Figure 8
Geophysical Incentive System

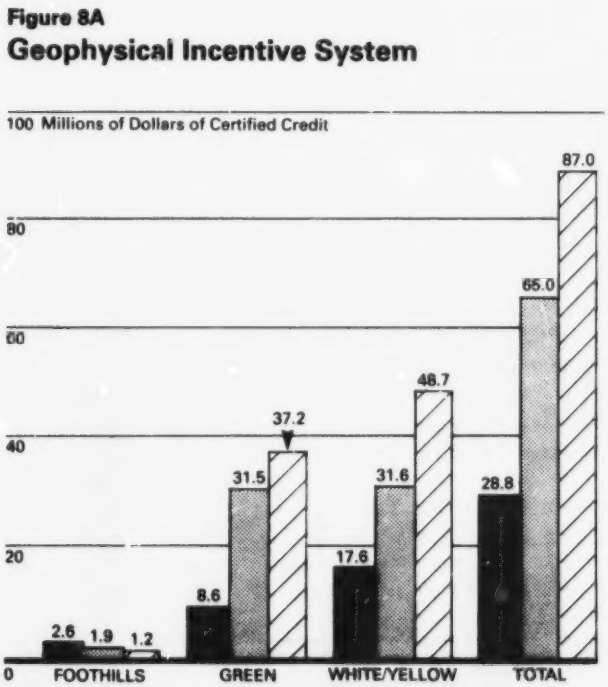


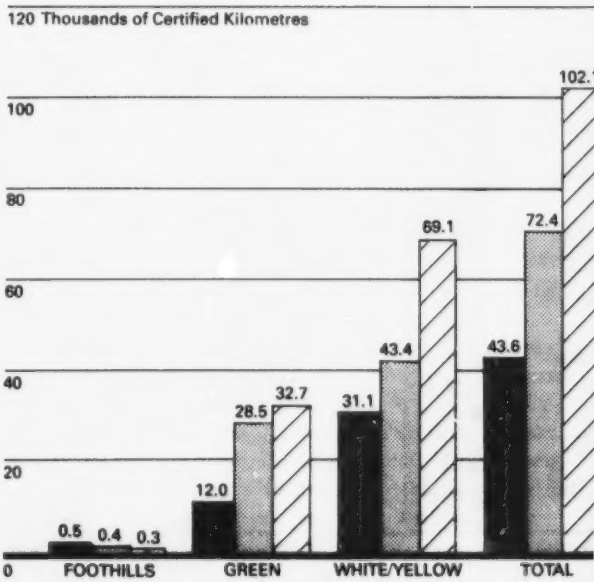
SOURCE: Mineral Resources Division

There were 473 exploration licences and 127 exploration permits currently active, an increase of 74 licences and 13 permits.

A significant administrative simplification to the 1983 Geophysical Incentive Regulation was the removal of the requirement to pre-certify incentive programs. Completed programs eligible for the grants of incentive credit increased by 443 to 1 708 for the fiscal year, an increase of 35 per cent (Figures 8 - 9).

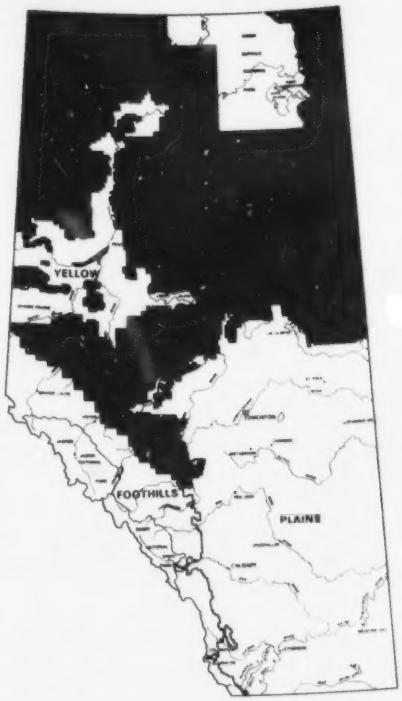
Figure 8A
Geophysical Incentive System





SOURCE: Mineral Resources Division

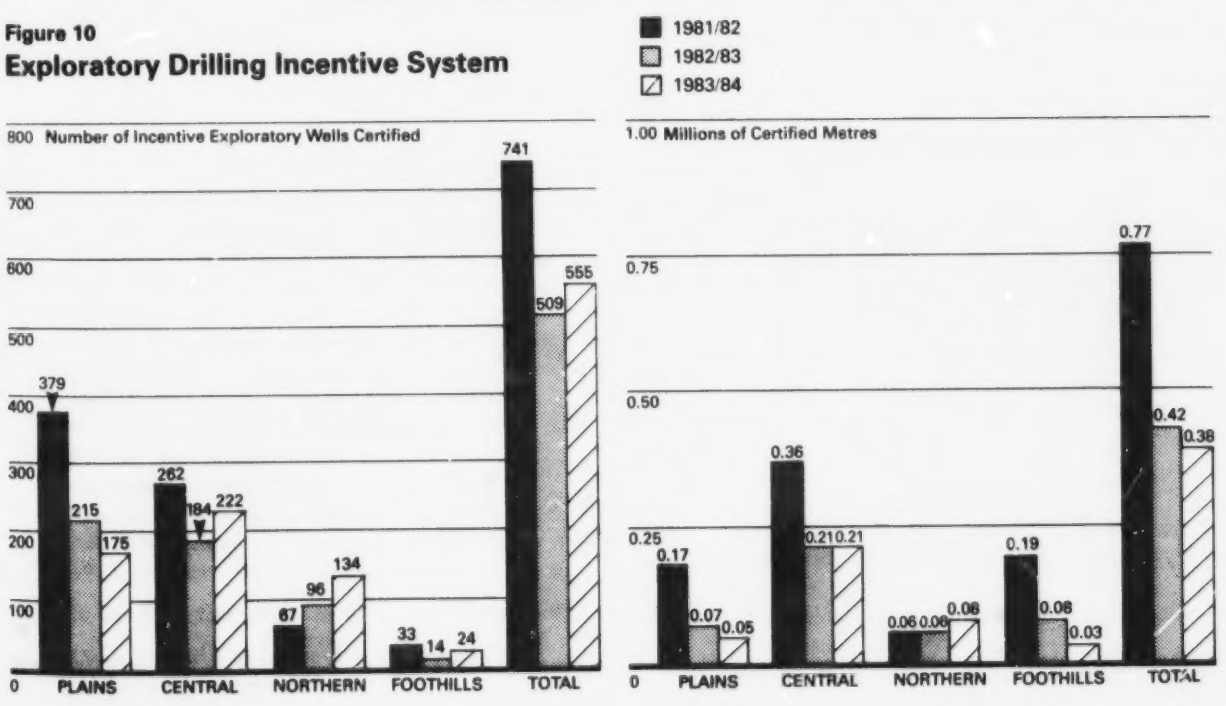
Figure 9
Geophysical Incentive Credit Areas



SOURCE: Mineral Resources Division

Certified exploratory wells increased by 46 to 555, an increase of nine per cent. Incentive credits established under the Exploratory Drilling Incentive System decreased by 28 per cent, and certified depth intervals decreased eight per cent from the previous year. The decrease in metres and credit established reflect the trend toward the evaluation of deeper rights underlying areas of established production. For such wells, only that portion drilled below the established production qualifies for the grant of incentive credit. Exploratory Drilling Incentive System statistics and map appear on Figures 10 to 11.

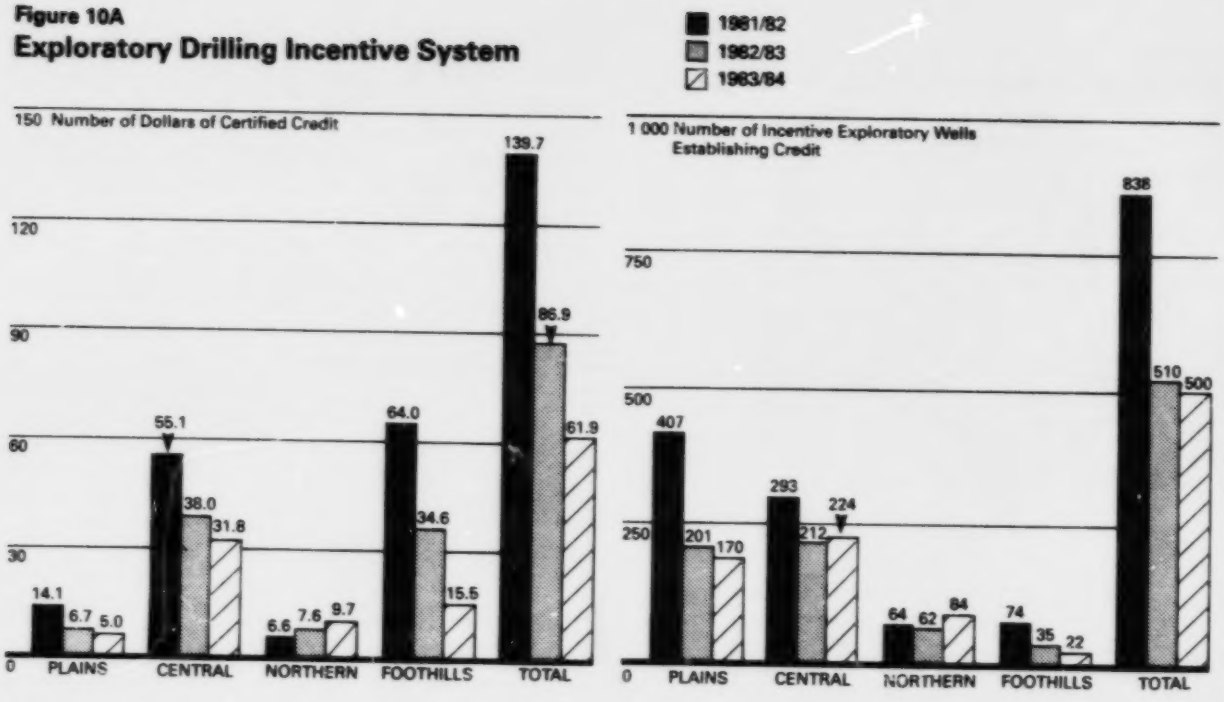
Figure 10
Exploratory Drilling Incentive System



SOURCE: Mineral Resources Division

Figure 10A

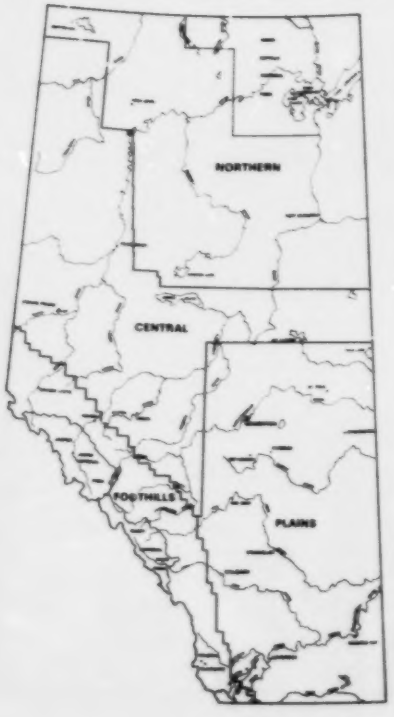
Exploratory Drilling Incentive System



SOURCE: Mineral Resources Division

Figure 11

Exploratory Drilling Incentive Credit Areas



SOURCE: Mineral Resources Division

Policy Analysis and Planning Division

Policy Analysis and Planning Division is responsible for providing economic and financial analysis related to resource development, information on energy renewable resources within and without Alberta, and energy conservation matters.

The Economic Planning and Financial Analysis Branch provides analysis and interpretation of economic and financial data relating to the province's energy and natural resources.

The Financial Analysis section conducted a wide range of related analyses, including:

- Evaluation of proposals for heavy oil upgraders, most notably extensive analysis of the Husky Oil bi-provincial project.
- Evaluation of proposals for several oil sands projects, including the announced Esso Cold Lake, BP Wolf Lake and Amoco Elk Point projects.
- Review of fiscal regimes for oil sands/heavy oil projects.
- Monitoring and forecasting of industry activity in Alberta and on the Canada Lands (federally-administered lands).
- Estimate of short- and long-term energy revenues and revenue distribution.
- Chairing the interdepartmental committee on energy price forecasting.

The Economic Planning section was primarily concerned with natural gas issues. Activities included:

- Analysis of Canadian demand for energy, especially for Alberta natural gas, under various policies.
- Examination of energy demand in the United States, with a view to determine market potential for Canadian natural gas.
- Participation in the federal-Alberta-British Columbia task force on natural gas export pricing.
- Analysis of the proposed Western liquified natural gas (LNG) export project.
- Analysis supporting negotiation and drafting of the domestic industrial incentive pricing plan for natural gas.
- Participation on the interdepartmental Natural Gas Forecasting Committee.
- Continued support of the Alberta Energy Resources Allocation Model developed by the Alberta Research Council, and preparation of a 1983 base case based on this model.

In the past year, the Resource Economics section:

- Co-ordinated a major review of provincial incentives for exploration.
- Provided analyses for federal-provincial discussions which led to development of a new NORP pricing system.
- Conducted analysis and made recommendations for royalty relief for more than 20 enhanced oil recovery projects.
- Prepared a model for forecasting incremental royalties and production for enhanced recovery projects.
- Represented the department at meetings with Energy, Mines and Resources, the National Energy Board, the Energy Supplies Allocation Board, and the Interprovincial Advisory Committee on Energy (IPACE) Subcommittee on Demand Restraint.
- Commenced development of provincial plans to help the public cope with emergency fuel shortages.
- Worked on the interdepartmental Supply Committee to prepare forecasts of crude oil supply, and monitored the potential for shut-in capacity.

During the summer of 1983, the Resource Information Services Branch was reorganized into two separate branches, Public Affairs, and Resource Statistics and Intelligence.

The Resource Statistics and Intelligence Branch, as reorganized, has three functions. First, it provides senior managers in the department with intelligence in the resource development and policy areas by collecting, evaluating and analysing developments in and outside Alberta, and analysing the potential implications to Alberta. Second, it provides statistical support, in particular when statistical analysis is required for policy assessment. Third, the branch contains the department library whose main function is a technical reference and general information facility.

In 1983/84, Resource Statistics and Intelligence has been responsible for:

- On-going monitoring of the petrochemical situation; co-ordinating of departmental input into the assessment of the federal Petrochemical Task Force Report; and representing the department in the Alberta interdepartmental petrochemical working group.
- Preparation of special assessments that included reviews of:
  - Oil plays in Alberta
  - Drilling and oil and gas activity in Alberta, other producing provinces and in federally-controlled lands
  - U.S. natural gas legislation and regulatory environment.
- On-going participation in discussions with respect to the proposed Western LNG Project.

During the year the editors, clerical personnel, and the staff of the Information Centre, previously part of Resource Information Services, were integrated into the Public Affairs Branch. Public acceptance of the Information Centre rose dramatically as demonstrated by publication distribution statistics, telephone inquiries, sale of various permits and licences, and traffic through the centre. The reorganization facilitated co-ordinated communication services previously offered from the two branches.

The Public Affairs Branch consults with department managers on communications planning, public relations, media relations, advertising, publications, printing and editing matters. At any given time, the branch is working on up to 450 projects. The editing and publications group continued to catalogue departmental publications and continues to make progress in applying a high standard of editing to the printed materials of the department. The communications consultants continued to gain the respect of their client divisions, supplying the widest range of consulting and implementation services.

Through the Energy Conservation Branch, the division is responsible for the development and implementation of awareness, information and education programs emphasizing the efficient use of energy. The branch works closely with other Alberta government departments and agencies, other provincial governments, the federal government and energy utilities to minimize program duplication, to share materials and to offer joint programs where practical.

In conjunction with these other agencies, the branch offers technical assistance in the evaluation of potential programs, policies, incentives or regulatory revisions which are directed toward increasing energy efficiency.

Three target areas were identified: industrial energy conservation programs, aimed at business, industry and institutions; residential and transportation conservation programs aimed at households; and school conservation programs for school children and teachers.

The industrial energy conservation program includes an energy audit service offered on request at no charge to businesses, industries and institutions which consume large amounts of energy. In total, 228 audits were conducted in all regions of the province. Facilities audited include manufacturing plants, agricultural installations, commercial buildings, recreational facilities and institutional complexes. The cost-sharing agreement with the federal government expired, and the province exercised its option of assuming ownership of the original energy bus and associated hardware. The second energy audit vehicle became operational, accounting for a 56 per cent increase in energy audits during the year.

Residential and transportation programs concentrated on information materials for the public. A total of 175 000 copies of the Energy Savers Series how-to booklets was distributed through hardware and building supply stores. In the transportation area, 600 000 Fuel Economy Calculators were distributed to service stations.

The Energy Savers Workshop program was expanded with 191 workshops held throughout Alberta. Workshops showed participants a large number of devices and approaches for reducing utility costs.

The School Visitation Program was extended to include urban as well as rural areas with 84 schools visited. The major new activity was the development of Grade 1 and 2 curriculum-support materials.

Scientific and Engineering Services Division

Scientific and Engineering Services Division provides technical advice and staff services to the deputy ministers and to the department on policy and program development and implementation. In addition, the division is responsible for the administration of the Alberta/Canada Energy Resources Research Fund (A/CERRF) and the province's Reclamation Research Program.

Technical advisory services provided by the division included studies related to coal resource development, heavy hydrocarbon liquid product upgrading, reclamation, and the impact of oil and gas development on other natural resources. The division also reviewed and made recommendations on the need for or support of various technical or research projects.

Research priorities of A/CERRF focused on coal research, energy conservation and renewable energy. Major progress was achieved in establishing greater co-operation between the department and the coal industry in the province for defining coal research needs and identifying appropriate research projects. The establishment of the Office of Coal Research and Technology to provide a focus for government funding of coal-related research in co-operation with industry is an important step toward enhancing the future competitiveness of the province's coal resources. The first two construction phases of the Coal Research Centre in Devon were completed, and the research groups are occupying the facilities.

Research and development activities directed to expanding the use of wind energy in the agricultural sector have resulted in the successful demonstration of the Deltx Windpump and the joint establishment, with Alberta Agriculture, of a windmill comparative performance test site outside of Lethbridge.

A number of projects to demonstrate the technical feasibility and establish the economic potential of different approaches to reducing the energy consumption of a range of building types were initiated.

All A/CERRF funded projects are generally conducted under contract. In principle, all project intellectual property is owned by the Crown. However, the individual contractor has wide-ranging rights to use resulting project technology in Alberta on a royalty-free basis. In addition, with certain limitations, the licensing of any such technology by the department to third parties may be pursued.

To date, patents have been issued for technology resulting from two different research projects. Additionally, four patent applications are currently being pursued at both the United States and Canadian patent offices, and the associated technologies are creating considerable interest and activity within the related industry.

The interdepartmental Reclamation Research Technical Advisory Committee (RRTAC), chaired by a member of this division, administered the province's Reclamation Research Program. The program, designed to make reclamation more efficient, consists of three industry-government co-operating research programs in the plains, oil sands and the mountain foothills mining sectors. Transfer of this new technology is already occurring through the membership of government regulatory and industry staff on the program's research management committees. The selection of the director of Reclamation Research as vice-chairman of the Development and Reclamation Review Committee, which is responsible for drafting operating and reclamation conditions for mines in accordance with provincial legislation, further enhances transfer and application of the research results.

In addition, the division directs the Deep Basin Research Program, aimed at improving inventory and protection of renewable resources during development activities for petroleum and natural gas. In co-operation with industry and other divisions, significant advances were made in developing new equipment for measuring stream flow and assessing practice for evaluation of fish habitat and habitat disturbances.

Alberta Oil Sands Equity

Alberta Oil Sands Equity manages Alberta's investment in the Syncrude Project and in an exploration and development program on six oil sands leases in northeastern Alberta.

The Syncrude Project experienced another good year with synthetic crude oil production totalling 5.6 million cubic metres (35.2 million barrels). Alberta's 16.74 per cent investment in the Syncrude Project produced a net profit of $61 467 000.

On July 7, 1983, the Syncrude participants reached agreement with the Government of Alberta on an amended treatment of capital expenditures for royalty purposes for the period 1983-87. The adjustment allowed the participants to embark on a major $1.2 billion capital expenditure program designed to increase synthetic crude production levels to more than 20 669 cubic metres (130 000 barrels) a day. As well, the Syncrude owners agreed to study a major expansion of the Syncrude Project.

Alberta Petroleum Incentives Program

Alberta Petroleum Incentives Program (APIP) is approaching the mid-point of its six-year life span.

APIP is administered and funded by the Alberta government with the express goal of encouraging oil and gas exploration and development within the province. To do this, the program reimburses applicants for a percentage of their geological and geophysical expenses, expenses incurred in drilling exploratory and delineation wells, and asset costs for enhanced oil recovery projects. These incentives are paid only on costs and expenses incurred between January 1, 1981, and December 31, 1986.

By the end of the 1983/84 fiscal year, 3 671 applicants had registered with APIP and filed 10 326 applications for incentives. Over $838.1 million has been paid since the first incentive payment in June, 1982. Incentives paid during the 1983/84 fiscal year totalled $511.9 million.

APIP was adapted from a federal petroleum incentives program and was assumed by the province as part of the September, 1981, Canada/Alberta Memorandum of Agreement Relating to Energy Pricing and Taxation. A major factor in the development of the program's regulations was promotion of the federal government's goal of increasing Canadian participation in the resource sector.

During the 1983/84 fiscal year, one of APIP's major thrusts was to reduce the complexity of the program's regulations and to simplify the procedures for applicants making incentive claims.

In particular, APIP produced two major and innovative changes in the regulations, which were received with approval and enthusiasm by industry.

First, APIP created an overhead expense policy which cleared up many of the difficulties inherent in claiming incentives for eligible administrative expenses. Definition of these expenses has historically been a problem for industry in dealing with such bodies as the federal Petroleum Incentives Program, APIP and Revenue Canada.

The second major change to the regulations occurred in October when APIP raised the program's threshold limit. Threshold limit is the maximum amount of costs and expenses on which an applicant can make incentive claims during a fiscal year without having to apply the program's adjustment rules. These rules implement certain Canadianization aspects of the incentives program by penalizing the transfer of benefits from Canadian to non-Canadian entities. Under the amended regulations, the threshold limit was raised to $3 million from $500 000. With the implementation of this higher ceiling, over 90 per cent of APIP's applicants are now exempt from the adjustment rules.

Other amendments in October and December simplified the application process and defined APIP's relationship with other incentive programs. New application forms and a guide were developed to accommodate amendment changes, to reduce applicants' paperwork, and to allow APIP to computerize its manual assessing systems.

2

Renewable Resources Sector

Report of the Deputy Minister

F. W. McDougall, Deputy Minister, Renewable Resources
J. A. Brennan, Assistant Deputy Minister, Alberta Forest Service
L. M. Forbes, Assistant Deputy Minister, Public Lands
D. C. Surrendi, Assistant Deputy Minister, Fish and Wildlife
L. J. Cooke, Assistant Deputy Minister, Resource Evaluation and Planning
E. A. Kennedy, Executive Director, Alberta Bureau of Surveying and Mapping
R. F. Raitz, Director, Foreign Ownership of Land

The Renewable Resources Sector is responsible for the administration of Alberta's forest resources, public lands, and fish and wildlife resources. The sector is also responsible for land use planning, for providing surveying, mapping and aerial photography services within government, for monitoring purchases of "controlled" land, and for licensing land agents.

During 1983/84, the department was required to service increasing demands for Alberta's renewable resources and to effectively manage for their efficient use. Operational programs were extensively improved in both the Alberta Forest Service and the Public Lands Division. Both Fish and Wildlife and Public Lands carried out major policy reviews. The Resource Evaluation and Planning program was substantially accelerated during the year. The Bureau of Surveying and Mapping successfully completed a transition in senior management with the appointment of Mr. Ed Kennedy to replace Mr. Wally Youngs who retired after 35 years of dedicated service.

The Renewable Resources Sector administers a number of acts and regulations which govern the orderly development and use of Alberta's renewable resources, including:

- Forests Act
- Public Lands Act
- Wildlife Act
- Surveys Act
- Agricultural and Recreational Land Ownership Act
- Land Agents Licensing Act

To fulfil its responsibilities, the Renewable Resources sector is organized into six divisions: Alberta Forest Service, Public Lands, Fish and Wildlife, Resource Evaluation and Planning, Alberta Bureau of Surveying and Mapping, and the Foreign Ownership of Land Administration.

Alberta Forest Service

The objective of the Alberta Forest Service (AFS) is to maintain Alberta's forest lands in order to ensure a perpetual supply of benefits and products while maintaining a forest environment of high quality.

The forested lands of the province cover 397 000 square kilometres or about 60 per cent of the province, and are divided into 10 forests. Of this, 164 050 square kilometres are classified as productive forest land, supporting approximately 1.5 billion cubic metres of wood. An additional 71 905 square kilometres have the potential to produce forest products. The remaining area is composed mainly of rock, muskeg and wetland and is not considered capable of producing timber.

In 1983, there were 755 forest fires with losses of less than 3 000 hectares and a total fire suppression cost of $35 million (Figure 12). A number of initiatives were undertaken in the fire management program. A province-wide lightning detection system was completed at a cost of $600 000. It is one of the most sophisticated systems in the world and is designed to record all cloud-to-ground lightning strikes immediately. The province completed negotiations to participate in a co-operative agreement with the Government of Canada for Canadair CL-215 air tankers. The federal government will purchase and place at the disposal of the province two CL-215s in 1986 and the province, in turn, will purchase two CL-215s in 1987. A DC6-B retardant air tanker was added to the provincial fleet of leased air tankers, bringing the total to 11 B-26s, three DC-6Bs and three Cansos.

A formal Presuppression and Preparedness Resource System (PPRS) was implemented in 1983. The objective is to allow only 15 minutes maximum for initial attack time on all fires during high and extreme hazard periods throughout the province. In line with this objective, eight helitack (two crews of which are trained in rappelling) and three 25-person university student crews together with air support were employed for the fire season. This is an increase of one helitack crew and two student crews.

The mountain pine beetle infestation began in Alberta in 1977. This resulted from a northward and eastward expansion from Montana and British Columbia. To combat this problem, AFS implemented

Figure 12

Provisional Forest Fire Summary by Forest

Calendar Year

	Athabasca	Bow/Crow	Edson	Footner Lake	Grande Prairie	Lac La Biche	Peace River	Rocky/ Clearwater	Slave Lake	Whitecourt	Totals
Class of Fire											
A Spot — 0.10 Hectare	53	53	37	88	15	52	28	35	53	54	468
B 0.11 — 4.00 Hectares	28	10	18	64	13	25	16	10	27	17	228
C 4.10 — 40.00 Hectares	3	1	3	7	2	12	5	1	8	9	51
D 40.10 — 200.00 Hectares	—	1	—	2	—	—	—	—	1	2	6
E Over 200 Hectares	—	—	—	—	—	1	—	—	1	1	3
Cause of Fire											
Other industry	3	9	6	7	2	5	3	8	8	9	60
Lightning	60	3	10	101	5	31	26	7	47	26	316
Resident	4	8	8	13	6	17	6	8	12	13	95
Forest industry	—	4	—	9	1	1	1	2	—	1	19
Railroad	—	1	6	—	—	1	1	—	—	1	10
Recreation	11	32	15	16	12	12	4	15	9	16	142
Incendiary	3	3	3	9	1	10	5	3	5	5	47
Miscellaneous Known	3	3	7	5	1	8	3	3	6	5	44
Unknown	—	2	3	1	2	5	—	—	3	7	23
Total Number of Fires	84	65	58	161	30	90	49	46	90	83	756
Total Areas Burned (Hectares)	43.5	60.9	43.7	239.9	41.3	590.6	85.5	17.8	603.6	1 090.9	2 817.7
Fire Costs/Forest ($1 000)	222	74	31	1 300	119	712	450	48	273	1 066	4 295

Protection Budget and Other Costs ($1 000)	31 882
Insect and Disease ($1 000)	1 124
Total Protection Expenditure ($1 000)	37 301

SOURCE: Alberta Forest Service

a major control program in 1980. In 1983, the number of infested lodgepole pines requiring treatment declined to 5 000, compared with 31 000 in 1980. A major outbreak of beetles occurred in limber pine stands in 1983 with 24 000 trees requiring treatment.

Land disposition applications increased 12 per cent and 1 882 timber damage assessments were processed. In addition, seismic activity increased to 837 preliminary plans approved. Major linear developments reviewed included 12 transmission lines, 18 regulated pipelines and 95 roadway referrals. The Obed Mountain Coal Project and Phases I and III of the Esso Cold Lake Project were approved and are proceeding.

Two major research projects dealing with underground oil sand mining and reclamation requirements for reforested lands were also approved. The AFS received 1 396 requests for reclamation certificates and issued 1 763 certificates. In addition, two reclamation orders were issued.

Approximately 80 000 animal unit months (AUM)

Figure 13
Timber Operations on Public Lands
1983/84

		Forest Management Agreements, Timber Licences, Commercial Permits	Local Timber Permits, Tree Tags	Total Product Volume	Value per unit ($)	Total Value ($)
Active Timber Dispositions	Number	469	40 474			
Lumber and Plywood Logs (m^3)	Coniferous	5 547 171	274 282	5 821 453	50.36	293 168 373.08
	Deciduous	305 372	46 012	351 384	39.11	13 742 628.24
Round Timber (m^3)	Coniferous	53 891	133 894	187 785	76.30	14 327 995.50
	Deciduous	—	468	468	76.30	35 708.40
Pulpwood (m^3)	Coniferous	687 711	10 338	698 049	17.45	12 180 955.05
	Deciduous	116 567	1 326	117 893	17.45	2 057 232.85
Woodchips (m^3)	Coniferous	1 303 947	—	1 303 947	11.03	14 382 535.41
Fuelwood (m^3)	Coniferous	174	71 954	72 128	20.77	1 498 098.56
	Deciduous	26	52 262	52 288	20.77	1 086 021.76
Railway Ties (m^3)	Coniferous	12 643	—	12 643	60.12	760 097.16
Slabs (m^3)	Coniferous	593	—	593	37.39	22 172.27
Lath (m^3)	Coniferous	—	—	—	454.55	—
Christmas Trees (number)	Number	735	41 870	42 605	3.00	127 815.00
Transplants (number)	Number	—	20 842	20 842	2.00	41 684.00
Total volume (m^3)*	**Coniferous**	**6 301 590**	**490 468**	**6 792 058**		**336 509 726.03**
	Deciduous	**421 965**	**100 068**	**522 033**		**16 921 591.25**
		6 723 555	**590 536**	**7 314 091**		**353 431 317.28**

SOURCE: Alberta Forest Service

* Excludes woodchips and slabs

continued to be utilized in the Rocky Mountain Forest Reserve. To maintain the current level of grazing, 400 hectares of range improvement were carried out.

The report Land Values for Forestry in Northern Alberta was prepared, providing essential economic information on Alberta's forested lands. A pilot project for determining forest site productivity for planning purposes was carried out.

Timber harvested from provincial Crown lands reached a record 7 314 091 cubic metres (Figure 13). The Timber Salvage Incentive Program was completed at the end of the calendar year. Initiated in the fall of 1981, this program provided an incentive for timber operators to utilize the large volumes of timber killed by fire and mountain pine beetle. This program followed the severe 1981 fire season, and was extended after the 1982 fire season, which again caused widespread damage to the forest resources. A total of 500 million board feet of timber was harvested.

The number of timber dispositions issued was 40 600, down from 1982/83, although 104 were major dispositions compared with 81 in the previous year (Figure 14).

The Phase 3 Forest Inventory program was completed on schedule in March. Inventory maps and computer files were produced for some 307 000 square kilometres of the forested area of the province. Growth predictions and estimates of current standing volume can now be made with more reliability and flexibility.

Work continued on the development of timber management plans to facilitate the renewal of quota certificates in 1986. A major change to the renewed quotas will be an increased level of utilization standards. Minimum diameter utilized will be 15 centimetres compared with current common levels of 25 centimetres. The Timber Management Branch is also contributing to the Integrated Land Use Planning process on an on-going basis.

A Forest Inventory Update program is in place and is being used to upgrade forest inventory data from date of original photography, in order to account for depletions such as major fires and timber harvesting. Maps and computer files are updated concurrently.

Reforestation surveys were completed on 27 933 hectares of cutover land, including 10 782 hectares of post-harvest surveys and 17 151 hectares of regeneration surveys. Of the area surveyed for regeneration, 76 per cent was found satisfactorily stocked according to existing provincial standards.

Silviculture treatments completed by AFS included mechanical scarification of 8 118 hectares, seeding of 5 617 hectares, planting of 7 547 hectares (10 616 495 seedlings) and thinning of 218 hectares. Cone collection totalled 1 180 hectolitres for pine, 814 hectolitres for spruce and 143 hectolitres for Douglas fir.

The Maintaining Our Forest Afforestation Program (MOF), funded through the Alberta Heritage Savings Trust Fund, included 41 580 hectares of stocking surveys, land clearing of 8 527 hectares, 8 184 hectares of scarification, 11 103 hectares (15 596 722 trees) planted, 3 715 hectolitres of cones collected, 1 315 hectares aerially seeded and 503 hectares thinned (Figure 15).

A total of 39 operational reclamation projects was completed in different forests. Of the projects, 10 were funded from the Alberta Heritage Savings Trust Fund allocation and the rest were funded from the department's regular budget. Work commenced on the joint government-industry-sponsored reclamation research program on suitability of woody species for reclamation.

Work on co-operative genetics and tree improvement programs continued with Forest Management Agreement (FMA) holders. A site plan for a seed orchard complex to be located near Grande Prairie was prepared by B.C. Forest Products Ltd., Canadian Forest Products Ltd., and Procter and Gamble Cellulose Ltd., which are jointly responsible for developing and operating the seed orchard. Land search for a seed orchard to be developed near Whitecourt was completed and a parcel of Crown land selected. Maintenance was carried out jointly with participating FMA holders on eight lodgepole pine progeny-test research plantations.

Three research plantations were established at various locations in the province and the planting of a white spruce seed orchard at Pine Ridge was completed. Maintenance and assessment of numerous research plantations established in earlier years was carried out and site selection was done for four additional experimental areas. Twenty-eight superior white spruce trees were located in natural stands in northern Alberta. Expansion of the clone bank at Pine Ridge continued with the addition of 41 white spruce clones.

Pine Ridge Forest Nursery had its biggest year to date in terms of seedlings shipped. For the first time, two complete crops of container seedlings were grown in the greenhouses. The nursery processed 6 757 hectolitres of pine cones, 11 330 hectolitres of white spruce cones, 143 hectolitres of Douglas fir cones and 10 hectolitres of black spruce cones. The total seed inventory increased by 7 349 kilograms to a total of 50 434 kilograms. Containerized seedling production continued to increase with 20 223 917 seedlings produced. There were 22 520 116 containerized seedlings shipped for planting. The bareroot seedling inventory now stands at 40 905 300 seedlings in the

Figure 14

Timber Dispositions Issued

1983/84

Class	Number Issued	Class	Number Issued	Class	Number Issued
Coniferous timber quota	4	Commercial Timber Permits:		Tree tags	38 713
Deciduous timber allocations (DTA)	—	Coniferous — green	30	Custom sawmill, planer mill or timber treating or processing plant permits	23
Licences:		Coniferous — dead or damaged	21		
Coniferous quota	41	Deciduous — green	2		
Deciduous, DTA	5	Local timber permits	1 761		

SOURCE: Alberta Forest Service

Figure 15

Maintaining Our Forest
Reforestation Work Program by Forest Activity

1983/84

Forest	Stocking Surveys (hectares)			Site Preparation (hectares)		Planting				Cone Collection (hectolitres)		Seeding (hectares)		Thinning (hectares)
						Conventional		Container						
	Aerial R.	Ground R.	Ground Intensive	Land Clearing	Scarification	Area (hectares)	Number of Trees	Area (hectares)	Number of Trees	Pine	Spruce	Aerial	Hand	
Footner Lake	20 150	—	3 368	2 750	2 327	968	1 572 155	1 537	2 450 226	—	584	1 315	—	—
Lac La Biche	—	790	986	1 343	2 396	—	—	2 234	3 552 173	—	646	—	—	—
Peace River	10 250	400	—	2 937	761	1 570	1 807 398	1 748	2 169 969	—	290	—	—	—
Slave Lake	2 000	2 936	700	2 700	2 700	—	—	3 046	4 044 801	3	2 192	—	—	—
Whitecourt	—	—	—	—	—	—	—	—	—	—	—	—	—	241
Rocky	—	—	—	—	—	—	—	—	—	—	—	—	—	262
Edson	—	—	—	—	—	—	—	—	—	—	—	—	—	
Total	32 400	4 126	5 054	0 527	8 184	2 538	3 379 553	8 565	12 217 169	3	3 712	1 315	—	503

SOURCE: Alberta Forest Service

Aerial R. = Aerial Reconnaissance

Ground R. = Ground Reconnaissance

fields. A total of 9 549 136 was shipped for planting in 1983 and another 7 368 605 were lifted for shipping in 1984. The combined total of containerized and bareroot seedlings shipped in 1983 totalled 32 069 252 seedlings. This is the largest number shipped in one year from Pine Ridge Forest Nursery since production started in 1978.

Forest research was carried out in four major areas: reforestation, watershed, site classification, and growth and yield. Reforestation research was conducted for the extension of planting seasons, determination of optimal lifting time and storage for bareroot seedling stock, identification of optimal microsites for planting, and inoculation of seedlings with beneficial fungi to enhance seedling survival and growth. Watershed research activities were centred on the preparation of study plans and the assembly of a study team for the Tri-Creek Watershed program in co-operation with various forest management and research agencies. This project includes the evaluation of data before logging and collection and analysis of data after logging to find out the effect of logging on fish populations. Site classification research was directed to the description of various ecosystems in west-central Alberta in co-operation with the Resource Evaluation and Planning Division and the Canadian Forestry Service.

A long-term new project concerning stand development after harvesting was also initiated. Twenty studies were financed in the form of contracts and were awarded to private, university and government agencies to carry out a wide variety of research which requires specialized knowledge or equipment which are not available within AFS. The major projects were related to the development of biological repellents to control snowshoe hare, development of a stand growth model for mixedwood stands, identification of western gall rust-resistant lodgepole pine trees and drainage design of forested peatland. A total of 10 research studies was funded from the Forest Development Research Trust Fund concerning numerous problem areas such as the development and testing of pheromones (chemical attractants) for use against mountain pine beetles, investigation of aspen wood properties, and studying the effect of Armillaria root rot in young stands.

The Junior Forest Warden Program increased to 97 clubs with 1 900 members. The continued promotion and recruitment of new clubs and leaders is expected to increase membership even more for next year. More than 50 leadership workshops were conducted throughout the province. The Junior Forest Ranger Program for older youths (16 - 18) engaged 66 young Albertans in learning and working in the forest.

Public Lands Division

Public Lands Division is responsible for the administration of public lands as defined in the Public Lands Act.

Public lands are leased for grazing, cultivation, recreational, commercial and industrial uses, including those surface leases related to the oil and gas extraction industry. Suitable lands may be sold for certain specified purposes such as farms, subdivisions and plant sites. Public lands are also used for the establishment of grazing reserves, which are tracts of land developed and administered by the division for livestock grazing.

The division is responsible for detailed classification of lands to determine their suitability for various purposes. Public lands may be reserved for the use of other departments and agencies, and land-use restrictions are placed on certain public lands, limiting their use to specified purposes.

The total area of Alberta is 661 185 square kilometres (255 285 square miles) or 66 million hectares (163 million acres) (Figure 16). About 62 per cent is under provincial control. Nine per cent is federal Crown land, one per cent is Indian reserves and the remaining 28 per cent is privately owned. In excess of 60 per cent of all lands in the province are non-settled, largely the forested regions of the province.

Of the public lands under disposition managed by the division (4.8 per cent of the total provincial land area), about 0.6 million acres are under disposition leading to title. About 7.15 million acres are under disposition not leading to title (lease, permit or licence) and include 5.7 million acres of grazing leases and permits. Statistics indicating the number of applications received and the number and area of all public land

NOTE: The Public Lands Act of Alberta retains imperial measurement; therefore, Public Lands information in the ENR Annual Report is given in imperial and SI (metric) units. All other divisions report only in metric.

Figure 16

Status of Lands in Alberta

March 31, 1984

	Area		Percentage of Alberta
	square kilometres	square miles	
Privately-owned land	183 068	70 683	27.7
Public lands			
Under disposition leading to title	2 440	942	0.4
Under disposition not leading to title	28 925	11 168	4.4
Special areas	12 963	5 005	1.9
Provincial parks, wilderness areas	2 326	898	0.3
Willmore Park, ENR natural areas	4 766	1 840	0.7
Metis settlements	5 053	1 951	0.8
Indian reserves	6 566	2 535	1.0
Non-settled public lands			
Forested lands within the Green Area[a]	282 225	108 968	42.7
Forest management agreement areas and provisional reserve	54 775	21 149	8.3
Vacant public land (within Yellow and White areas[b])	15 022	5 800	2.3
Federally-controlled lands (national parks, research stations, Department of National Defence, etc.)	63 056	24 346	9.5
Total area of Alberta	661 185	255 285	100.00
Land	644 389	248 800	97.5
Water	16 796	6 485	2.5

SOURCE: Public Lands Division

[a] Green Area: Forested lands withdrawn from settlement, managed for forestry and other multiple uses.

[b] Yellow Area: Lands located in the Peace River region. Public lands in this area are managed for multiple use, including agricultural uses, pursuant to the Public Lands Act and regulations.

White Area: The settled area of the province. Suitable public lands within this area may be disposed pursuant to the Public Lands Act and regulations, except for homestead sale dispositions.

Figure 17
Applications For Public Lands

	Number Received			Number Received	
	1982/83	1983/84		1982/83	1983/84
Cultivation permits	133	122	Miscellaneous leases	154	186
Farm development leases	447	420	Miscellaneous leases (subdivision lots)	83	83
Farm development sales	380	342	Miscellaneous permits	445	712
Forest grazing licences	37	45	Oil sands exploration	6	9
Grazing leases	621	522	Pipeline agreements	669	846
Grazing permits	879	872	Pipeline installation leases	52	57
Homestead sales	317	341	Recreational leases	55	36
Public land sales	99	113	Surface material leases	63	93
Coal exploration	33	41	Surface material licences	896	937
Easements	201	214	Total	8 397	9 009
Licence of occupation	1 102	1 157			
Mineral surface leases	1 725	1 861			

SOURCE: Public Lands Division

dispositions are presented in detail in Figures 17 and 18, respectively.

The number of grazing lease applications received in 1983/84 declined approximately 16 per cent compared with 1982/83. The number of new leases remained the same; however, the acreage contained in the new grazing leases issued increased 36 per cent. Provincially, the total acreage in grazing leases remained at approximately 5.3 million acres.

The demand for agricultural crop land continued to be high, although the number of applications received declined nearly four per cent over the previous fiscal year. There were, on the average, three applicants for each parcel of public land posted, which indicated that only a third of the demand for public land for farming was being met. A total of 1 660 quarter sections (222 584 acres) was posted (Figure 19), of which 288 quarter sections (42 000 acres) were posted for beginning farmers.

Activity related to oil and gas increased by approximately 10 per cent over the last fiscal year. The most significant increase (26 per cent) occurred in pipeline applications. Nine oil sands exploration applications were received, an increase of 50 per cent, with most of the activity taking place in the Fort McMurray area.

Coal exploration activity increased approximately 24 per cent. Most exploration work occurred adjacent to known coal development areas to define deposits further before development. Public lands were made available to Cardinal River Coals Ltd. to allow major expansion at Luscar. Surface materials lease applications increased 48 per cent. The demand for sand and gravel was evenly dispersed throughout the province.

Public demand for recreational land decreased significantly. The number of applications decreased approximately 35 per cent with no apparent reason for the decline other than financial constraints.

Interest in the seeding and harvest of wild rice continued to increase. Forty-six applications were received compared with 13 in 1982/83 and nine in 1981/82. Although wild rice growing remains at the experimental stage in Alberta, the Northern Alberta Wild Rice Growers Association was formed in 1983 to promote the industry.

Figure 20 portrays activity in public lands. In addition to showing the number of dispositions in effect, the annual activity in applications for disposition and the number of dispositions issued are shown.

A Fishing Lodge Policy was established in November. This policy outlines the criteria for the evaluation of lease applications and for the issuance of dispositions for operating a fishing lodge in the province.

Public Lands Division is involved in the administration of a number of on-going programs.

Figure 18
Public Lands Disposition Statistics

DISPOSITIONS IN EFFECT	1983/84			1982/83		
	number	hectares	acres	number	hectares	acres
Dispositions leading to title						
Agricultural dispositions:						
Agricultural farm sales	163	15 352	37 934	219	19 698	48 674
Farm development sales	971	97 586	241 137	1 002	100 853	249 208
Homestead sales, leases	992	127 360	314 706	1 169	146 777	362 685
Public land sales	36	3 792	9 370	57	4 076	10 071
Total	2 162	244 090	603 147	2 447	271 404	670 638
Non-agricultural dispositions:						
Public land sales[a]	120	134.5 lots		112	125.5 lots	
Dispositions not leading to title						
Agricultural dispositions:						
Cultivation permits	122	2 752	6 801	133	2 796	6 910
Farm development leases	1 498	140 800	347 917	1 494	142 031	350 958
Forest grazing licences	75	25 535	63 098	60	21 554	53 261
Grazing leases	5 492	2 161 419	5 340 867	5 457	2 162 807	5 344 295
Grazing permits	872	113 315	280 001	879	116 354	287 510
Seed crop leases	2	3 495	8 635	2	3 495	8 635
Total	8 061	2 447 316	6 047 319	8 025	2 449 037	6 051 569
Non-Agricultural dispositions (special uses)						
Alberta Housing Corporation:						
Metis leases	6	14	35	7	19	47
Mineral surface leases	18 043	83 382	206 037	17 267	76 032	187 875
Miscellaneous leases	597	21 579	53 321	561	22 069	54 532
Pipeline agreement leases	9 963	46 349	114 529	9 324	43 297	106 988
Pipeline installation leases	596	562	1 389	535	529	1 308
Recreational leases	305	8 075	19 953	280	7 077	17 488
Sand and gravel leases,[b] surface material leases	457	6 250	15 443	450	6 147	15 190
Staff housing land licences	16	6	15	16	6	15
Total	29 983	166 217	410 722	28 440	155 176	383 443
'D' Reservations	1 961			1 818		
Easements	3 816			3 764		
Licence of occupation	8 772	Area not available		8 478	Area not available	
Miscellaneous permits	712			445		
Miscellaneous leases (subdivision lots)	653			646		
Surface materials licences	937			896		
Right of entry	5 430			5 461		
Total	22 281			21 508		

Continued

DISPOSITIONS IN EFFECT	1983/84			1982/83		
	number	hectares	acres	number	hectares	acres
Letters of authority (equivalent to a disposition)	—	—	—	6 319	—	—
Notification for title and title transfers						
Farm development sales[a]	207	18 746	46 322	174	15 074	37 248
Homestead dispositions	212	23 957	59 197	225	25 830	63 826
Other sales	42	395	977	25	1 208	2 985
Transfers of administration and control	18	1 588	3 925	17	1 583	3 912
Exchange of land	14	1 307	3 230	29	1 439	3 557
Special grants and free grants	18	134	330	13	467	1 155
Lots — Notifications	20	—	—	7	—	—
— Transfer of administration and control	3	—	—	2	—	—
Total	534	46 127	113 981	492	45 601	112 683
Lands acquired by revestment[b]						
Exchange of land	36	1 595	3 940	21	813	2 009
Purchase under land assembly	64	1 419	3 507	82	2 724	6 731
From Canada — PFRA						
Canal rights-of-way	3	8	20	1	13	33
Abandoned railways	246	577	1 426	—	—	—
Other	21	1 235	3 051	51	170	419
Total	370	4 834	11 944	155	3 720	9 192
Other Transactions[c]						
Notifications to minister (pseudo revestment)	801	—	104 250	489	31 642	78 187
Private subdivisions checked to determine if public lands affected						
Subdivision applications checked	751	—	—	974	—	—
Subdivision plans approved	92	—	—	149	—	—
Total	843	—	—	1 123	—	—
Number of survey plans approved and indexed	2 571	—	—	3 160	—	—
Survey of public lands						
Quarter sections	356	—	—	240	—	—
Lots	104	—	—	25	—	—
Posting of public lands						
Quarter sections	1 660	90 076	222 584	1 245	66 641	164 672
Subdivision lots	—	—	—	4	—	—

SOURCE: Public Lands Division

[a] Includes sales for industrial, residential, recreational and commercial purposes.

[b] Commencing Jan. 11, 1978, issuing of these dispositions was discontinued. They were replaced by surface material leases.

[c] Including farm development sales, agricultural farm sales.

[d] Statistics in the number columns are the number of quarter sections or part thereof and are not included in the total.

Figure 19

Posting of Agricultural Lands

1983/84

Region	For Sale Purposes			For Lease Purposes[c]			For Grazing Purposes			Total		
	No.[b]	Hectares	Acres	No.	Hectares	Acres	No.	Hectares	Acres	No.	Hectares	Acres
Peace River[a]	667[d]	40 323	99 641[d]	43	2 413	5 963	337	14 911	36 846	1 047	57 647	142 450
Northeast	27	1 565	3 867	22	896	2 215	414	22 214	54 891	463	24 675	60 973
Eastern Slopes	7	452	1 117	1	64	157	112	5 764	14 244	120	6 280	15 518
Central	1	63	156	1	36	90	25	1 279	3 160	27	1 378	3 406
Southern	1	65	160	—	—	—	2	31	77	3	96	237
Total	703	42 468	104 941	67	3 409	8 425	890	44 199	109 218	1 660	90 076	222 584

SOURCE: Public Lands Division

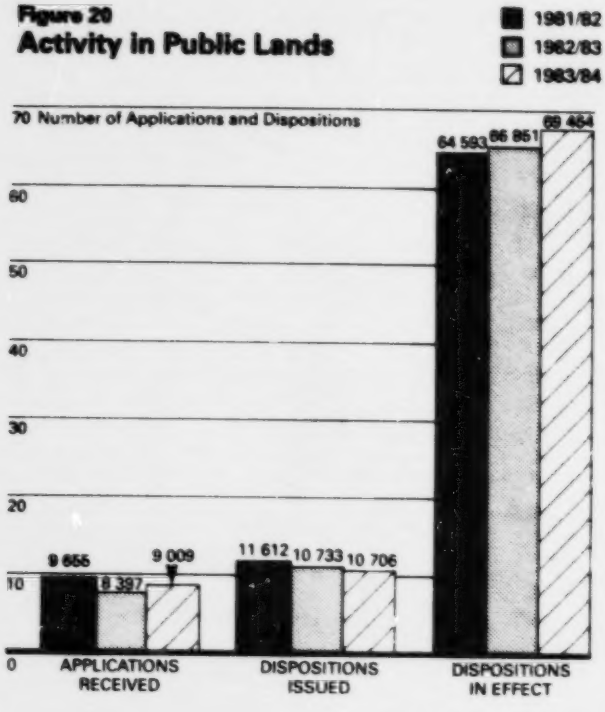
[a] Includes homestead sales.

[b] Number of quarters or parts thereof.

[c] Farm development leases without option to purchase.

[d] Includes 288 quarters of land posted in March, 1984, by Special — Beginning Farmers Posting covering 42 199 acres.

Figure 20
Activity in Public Lands



SOURCE: Public Lands Division

Under the government-funded Range Improvement Program, 210 applications were approved and funded for range improvement projects. In addition, funding continued for 736 range improvement projects begun earlier. Projects undertaken on grazing leases included clearing, piling, forage establishment, trail and cross fence construction, and water storage projects. Program spending amounted to $3.8 million.

The Grazing Reserve Program provides summer pasture for the livestock of small-scale farmers and ranchers to free their privately-owned lands for crop and hay production. The program is intended to aid in diversifying and stabilizing the agricultural industry. There are 32 grazing reserves throughout the settled areas of the province, which cover 0.7 million acres. In 1983, 29 operational reserves accommodated 224 371 animal unit months (AUM) of livestock grazing (equivalent to 58 765 head for a typical five-month season) owned by 1 537 patrons. Development of grazing reserves included clearing, burning, breaking, seeding, aerial spraying, fertilizing, fencing and water development. These activities involved contracts covering nearly 147 500 acres and cost $5.26 million, with approximately $3.78 million funded by the Alberta Heritage Savings Trust Fund. Statistics relating to the grazing reserve program are outlined in Figures 21, 22 and 23.

The natural areas program staff continued to work co-operatively with Alberta Recreation and Parks on the ecological reserves program. This included selection of proposed reserves and systematic study of natural zones of the province. A number of proposed natural areas were added to the existing inventory for recreation and education. Plans for several of these natural areas were started and some were completed with assistance from public interest groups. Since 1968, 92 natural areas comprising 44 283 acres were established by order-in-council. No new areas were established by order-in-council this fiscal year.

Thirty-two reclamation projects were completed using monies from both the General Revenue fund and the Alberta Heritage Savings Trust Fund. These involved reclaiming surface disturbances where the parties responsible for the disturbance could not be determined or where erosion control work was necessary.

A gravel deposit in the Canmore Corridor was released for development. Part of the deposit was established as a public pit area. Tree seedlings were planted along the edge to screen the excavation area from the highway.

Contracts were issued to a private consulting firm to conduct a detailed arable land inventory of 88 854 acres as part of the department's accelerated land sales initiative and 39 000 arable acres were located. As part of the accelerated land sale initiative, legal surveys were completed for 22 sections of public lands southeast of Valleyview, seven sections south of Wandering River and 60 sections southeast of Keg River. In addition to agricultural land surveys, 19 lots were surveyed for a cottage subdivision north of Peace River, 10 lots for a commercial subdivision at Anzac, 49 lots for residential and light-industrial subdivision at North Zama City and 26 lots for light-industrial purposes at Red Earth.

Figure 21

Land Area and Utilization of Provincial Grazing Reserves

1983/84

Grazing Reserve	Total Area		Developed Area[a]		AUMs[b] Utilized Number	Number of Patrons
	hectares	acres	hectares	acres		
Bear Canyon	8 210	20 288	3 399	8 400	6 778	27
Blueberry Mountain	3 894	9 623	2 197	5 428	5 702	27
Kleskun Lake	5 563	13 747	4 711	11 640	9 187	80
Valleyview	5 302	13 100	2 054	5 075	4 468	35
Wanham	7 582	18 735	5 923	14 635	8 204	54
Total Grande Prairie reserves	30 551	75 493	18 284	45 178	34 339	223
Fort Vermilion	7 781	19 226	3 681	9 096	2 485	20
High Prairie	11 414	28 204	3 966	9 800	6 719	27
Manning	4 015	9 920	2 045	5 052	3 272	25
Three Creeks	15 997	39 529	4 287	10 593	5 739	23
Whitemud	9 617	23 763	4 290	10 600	6 415	34
Total Peace River reserves	48 824	120 642	18 269	45 141	24 630	129
Black Bear	6 911	17 078	4 348	10 745	8 797	46
Connor Creek	13 250	32 740	7 274	17 975	19 034	97
Thorhild	6 867	16 968	3 529	8 720	9 030	65
Total Edmonton reserves	27 028	66 786	15 151	37 440	36 861	208
Buck Mountain	6 926	17 114	3 628	8 964	15 338	91
Jack Pine	5 084	12 563	2 420	5 981	7 836	45
Medicine Lake	6 601	16 311	3 780	9 340	10 462	86
Pembina[c]	7 907	19 537	726	1 795	—	—
Rocky Mountain House[c]	6 411	15 842	1 532	3 785	—	—
Sang Lake[c]	2 723	6 729	—	—	—	—
Total West-Central reserves	35 652	88 096	12 086	29 865	33 636	222
Minburn	5 474	13 527	3 035	7 500	6 660	69
Rannach	7 697	19 019	6 014	14 860	8 670	72
Smoky Lake	5 526	13 654	1 941	4 797	2 770	19
St. Paul	9 579	23 669	6 225	15 382	8 310	59
Wolf Lake	11 917	29 447	6 204	15 330	4 670	35
Total St. Paul reserves	40 193	99 316	23 419	57 869	31 080	254
Hays	2 770	6 845	384	950	3 940	35
Lonesome Lake	4 753	11 745	3 501	8 650	9 768	74
Purple Springs	2 413	5 962	648	1 600	5 091	55
Twin River	13 421	33 163	—	—	8 599	68
Total Lethbridge reserves	23 357	57 715	4 533	11 200	27 398	232
Bow Island	15 794	39 028	3 321	8 207	11 371	76
Seven Persons	2 683	6 630	1 253	3 097	4 833	56
Pinhorn	30 900	76 353	—	—	11 387	78
Sage Creek	30 914	76 388	—	—	8 836	59
Total Medicine Hat reserves	80 291	198 399	4 574	11 304	36 427	269
Provincial total	285 896	706 447	96 316	237 997	224 371	1 537

SOURCE: Public Lands Division

[a] Area cleared, worked down, and seeded.

[b] An AUM (animal unit month) is forage provided for one animal unit (one mature cow with calf or their equivalent) for one month. Statistics include sheep and horses.

[c] Grazing reserves not yet operational.

Figure 22

New Development on Provincial Grazing Reserves

March 31, 1984

Grazing Reserve	Area Developed or Improved Hectares (Acres)									Kilometres (miles) Fenced	Number of Dugouts
	Cleared and Piled	Burned[a]	Repiled[a]	Broken	Worked Down	Seeded		Regrowth Control[c]	Fertilized		
Bear Canyon[b]	—	486	283	—	889	111	241*	—	—	3	4
	—	(1 200)	(700)	—	(2 196)	(275)	(595)	—	—	(2)	
Blueberry Mountain[b]	—	70	70	—	174	214	14*	—	—	8	—
	—	(172)	(172)	—	(431)	(528)	(35)	—	—	(5)	
Kleskun Lake	—	—	—	—	202	202		—	—	14	—
	—	—	—	—	(500)	(500)		—	—	(9)	
Valleyview[b]	—	97	42	—	57	—		—	—	—	—
	—	(241)	(103)	—	(141)	—		—	—	—	
Wanham	—	—	—	—	511	162	350*	—	—	11	—
	—	—	—	—	(1 264)	(400)	(865)	—	—	(7)	
Total Grande Prairie	—	653	395	—	1 833	689	605*	—	—	36	4
	—	(1 613)	(975)	—	(4 532)	(1 703)	(1 495)	—	—	(23)	
Fort Vermilion[b]	—	—	—	—	234	234*		—	1 052	27	—
	—	—	—	—	(579)	(579)		—	(2 600)	(17)	
High Prairie[b]	—	—	428	—	—	—		445	1 619	35	11
	—	—	(1 059)	—	—	—		(1 100)	(4 000)	(22)	
Manning[b]	—	—	—	—	278	—		—	1 206	22	—
	—	—	—	—	(688)	—		—	(2 980)	(14)	
Three Creeks[b]	—	593	162	—	808	610		—	2 539	33	10
	—	(1 465)	(400)	—	(1 998)	(1 507)		—	(6 275)	(20.5)	
Whitemud	—	—	—	—	131	131*		—	546	10	—
	—	—	—	—	(324)	(324)		—	(1 350)	(6)	
Total Peace River	—	593	590	—	1 451	610	365*	445	6 962	127	21
	—	(1 465)	(1 459)	—	(3 589)	(1 507)	(903)	(1 100)	(17 205)	(79.5)	

Black Bear	—	427	196	196	—	—		—	—	8	1
	—	(1 056)	(485)	(485)	—	—		—	—	(5)	
Blackfoot[b, c]	1 569	—	—	—	—	—		—	—	—	—
	(3 878)	—	—	—	—	—		—	—	—	
Connor Creek	—	1 027	805	1 879	910	267		—	—	9	4
	—	(2 538)	(1 990)	(4 643)	(2 248)	(660)		—	—	(5.5)	
Thorhild	144	243	—	243	—	—		—	—	6	3
	(355)	(600)	—	(600)	—	—		—	—	(4)	
Total Edmonton	1 713	1 697	1 001	2 318	910	267		—	—	23	8
	(4 233)	(4 194)	(2 475)	(5 728)	(2 248)	(660)		—	—	(14.5)	
Buck Mountain	—	—	—	—	—	—		243	—	6	—
	—	—	—	—	—	—		(600)	—	(4)	
Jack Pine	63	—	471	105	—	—		—	—	6	1
	(155)	—	(1 165)	(260)	—	—		—	—	(3.5)	
Medicine Lake[b]	121	121	1 077	121	40	40		—	828	5	—
	(300)	(300)	(2 662)	(300)	(100)	(100)		—	(2 046)	(3)	
Pembina[b]	457	1 779	1 779	1 632	1 878	726		—	—	22	7
	(1 130)	(4 395)	(4 395)	(4 033)	(4 640)	(1 795)		—	—	(13.5)	
Rocky Mountain House[b]	77	2 238	2 246	1 246	1 552	902	20*	—	537	52	5
	(190)	(5 531)	(5 549)	(3 078)	(3 834)	(2 230)	(50)	—	(1 326)	(32.5)	
Sang Lake[b]	641	608	608	608	605	—		—	—	—	3
	(1 583)	(1 502)	(1 502)	(1 502)	(1 495)	—		—	—	—	
Total West-Central	1 359	4 746	6 181	3 712	4 075	1 668	20*	243	1 365	91	16
	(3 358)	(11 728)	(15 273)	(9 173)	(10 069)	(4 125)	(50)	(600)	(3 372)	(56.5)	
Minburn	—	—	—	—	—	—		—	—	—	—
Rannach	—	—	—	148	148	61	87*	762	—	—	3
	—	—	—	(365)	(365)	(150)	(215)	(1 883)	—	—	
St. Paul	—	—	—	—	—	—		209	—	—	—
	—	—	—	—	—	—		(517)	—	—	
Smoky Lake	—	978	978	1 108	130	130		—	—	32	—
	—	(2 417)	(2 417)	(2 737)	(320)	(320)		—	—	(20)	
Wolf Lake[b]	—	239	239	1 923	1 684	1 684		—	—	16	6
	—	(590)	(590)	(4 751)	(4 161)	(4 161)		—	—	(10)	
Total St. Paul	—	1 217	1 217	3 179	1 962	1 875	87*	971	—	48	9
	—	(3 007)	(3 007)	(7 853)	(4 846)	(4 631)	(215)	(2 400)	—	(30)	

Continued

Grazing Reserve	Area Developed or Improved Hectares (Acres)								Kilometres (miles) Fenced	Number of Dugouts
	Cleared and Piled	Burned[a]	Repiled[a]	Broken	Worked Down	Seeded	Regrowth Control[c]	Fertilized		
Hays	—	—	—	—	—	—	—	372	6	—
	—	—	—	—	—	—	—	(920)	(3.5)	
Lonesome Lake	—	—	—	—	—	—	—	526	—	—
	—	—	—	—	—	—	—	(1 300)	—	
Poll Haven[d]	51	—	40	177	177	157	—	—	—	—
	(125)	—	(100)	(438)	(438)	(388)	—	—	—	
Purple Springs	—	—	—	—	—	—	—	445	—	—
	—	—	—	—	—	—	—	(1 100)	—	
Twin River	—	—	—	—	—	—	—	—	—	—
Total Lethbridge	51	—	40	177	177	157	—	1 343	6	—
	(125)	—	(100)	(438)	(438)	(388)	—	(3 320)	(3.5)	
Bow Island	—	—	—	384	384	—	—	—	—	1
	—	—	—	(950)	(950)	—	—	—	—	
Pinhorn	—	—	—	—	—	—	—	—	—	6
Sage Creek	—	—	—	—	—	—	—	—	—	2
Seven Persons	—	—	—	—	—	—	—	—	—	—
Total Medicine Hat	—	—	—	384	384	—	—	—	—	9
	—	—	—	(950)	(950)	—	—	—	—	
Provincial total	3 123	8 906	9 424	9 770	10 792	5 266 1 077*	1 659	9 670	331	67
	(7 716)	(22 007)	(23 289)	(24 142)	(26 672)	(13 014) (2 663)	(4 100)	(23 897)	(207)	

SOURCE: Public Lands Division

[a] Areas shown represent the areas previously cleared. The material from that clearing is burned and repiled.

[b] Heritage Savings and Trust Fund Projects.

[c] Regrowth control includes various types of control (i.e., aerial spraying, swathing, hydro-axing, mowing, prescribed burning).

[d] This land is held under grazing lease and is operated as a community pasture by the local patron association.

[e] Reseeded.

Figure 23

Grazing Reserve Development and Improvement Costs

Thousands of Dollars

	1982/83		1983/84	
	Regular Funding	Heritage Savings and Trust Funding	Regular Funding	Heritage Savings and Trust Funding
Northern reserves	263.0	2 170.8	203.1	1 234.5
West-Central reserves	640.7	1 322.7	490.8	2 118.0
East-Central reserves	346.1	443.6	335.9	427.0
Southern reserves	601.9	—	448.2	—
Total cost	1 951.7	3 937.1	1 478.0	3 779.5

SOURCE: Public Lands Division

NOTE: Improvement costs include land development, improvements, fertilization, and aerial spraying.

Fish and Wildlife Division

Fish and Wildlife Division is responsible for managing fish and wildlife resources in the province in a manner that provides maximum public benefits and ensures that viable populations are maintained for the enjoyment of future generations of Albertans.

During the 1983/84 fiscal year the division continued implementation of the Fish and Wildlife Policy approved by the Government of Alberta in October, 1982.

Major achievements included the development of a discussion paper for public review on policy matters being considered in the preparation of a new Wildlife Act. Extensive public interest was reflected in the discussion paper to the extent that the introduction of the proposed new legislation was deferred from the spring sitting of the 1984 Legislative Assembly to the fall sitting.

In response to the Fish and Wildlife Policy, a draft Fish and Wildlife Status declaration was prepared for public review. This document is intended to provide the first comprehensive government statement on the population levels of fisheries and wildlife resources required to achieve stated levels of public benefit. This resource policy paper is expected to be finalized by the fall of 1984 and will represent the first such initiative by any jurisdiction in Canada. The approved status document will become the basis for future divisional fish and wildlife resource planning and programming.

Specific sector policy papers have also been prepared on Non-Resident Sheep Outfitting, and the Disposition of Orphaned and Injured Wildlife. Other specific policy papers are currently in preparation.

The Fish and Wildlife Public Advisory Council was restructured and the terms of reference revised to strengthen the role of this council in policy and program development.

The Buck for Wildlife program terms of reference and policy were reviewed and revised. The new policy provides for a greater degree of participation for fish and game clubs and other non-government organizations. The focus of the program provides for a higher proportion of the funds to be expended on actual habitat enhancement with a significantly reduced administrative overhead.

Major initiatives in program planning and implementation have taken place within the Fish and Wildlife Division in order to enhance the level and quality of public service provided by the division through increased cost effectiveness and efficiency in program design and delivery.

The division honored the Athabasca Fish and Game Association; Mr. Alva C. Bair, Milk River; Mr. Charlie and Miss Winnie Ellis, Lacombe; Mr. George Mitchell, Carvel; and Mrs. Helen Ridgeway of Edmonton as recipients of the Bighorn Award for outstanding contributions to fish and wildlife resource conservation in the province.

The Fisheries Management Branch manages the aquatic resources in the province to ensure that viable fish populations are maintained for the benefit and enjoyment of Albertans.

During 1983/84 the Sport Fisheries Management Section was involved in a fish stocking program, the development of sport fishing regulations, a walleye enhancement program, checking lakes and streams in order to assess their production of fish and the effectiveness of management programs, and the development of public access facilities.

More than 5.5 million fish were stocked in 232 lakes and streams during 1983/84. Figure 24 shows the numbers and species of fish stocked. The fish stocking program provided angling opportunity in areas where there are few fish naturally and provided a variety of species for the angler.

A fisheries management project continued on the Bow River with the establishment of a new regulation requiring that all trout over 40 centimetres (16 inches) be released.

The public access development program saw the development of 11 sites complete with parking, sanitary facilities, standard signage and boat launching facilities.

The Commercial Fisheries Management Section continued to monitor and manage the commercial fishery in Alberta. Figure 25 shows commercial fish production during 1983/84. Development of a new commercial fishery licensing system and provincial fish marketing policy was initiated.

Figure 24
Species and Number of Fish Stocked
1983/84

Species	Number
Rainbow trout	3 129 403
Lake trout	235 524
Cutthroat trout	281 038
Eastern brook trout	267 100
Brown trout	5 647
Yellow perch	211 256
Walleye	1 381 499
Total	5 511 467

SOURCE: Fish and Wildlife Division

Figure 25
Commercial Fish Production in Alberta

Year	Weight (Tonnes)	Value to Fishermen ($)	Value as Marketed ($)
1981/82	2 245	1 627 798	3 213 411
1982/83	2 380	1 791 011	3 074 297
1983/84	1 916	1 658 406	2 735 091

SOURCE: Fish and Wildlife Division

Construction of a new fish hatchery at Cold Lake began in 1983 with completion expected in 1985. Fish-rearing facilities near Lake Wabamun were operated as a rearing station and produced 200 000 yearling trout.

The Fisheries Habitat Inventory and Development Section funded 22 projects from the Buck for Wildlife program. Fish resource and habitat inventory is an on-going program designed to provide information on the distribution of fish, their habitat, and the production capability of that habitat.

In the area of wildlife management, a project to return endangered wood bison to their former range in the Hay-Zama region was initiated in a co-operative effort with the Government of Canada and the Dene Tha Indian Band.

The pilot game-farming project at the Kikino Metis Settlement received technical aid through the Kikino Wildlife Ranching Advisory Committee. Two Indian reserves (Cold Lake and Sucker Creek) were offered technical assistance and advice concerning potential game-farming programs on their respective reserves.

With considerable public input through the Fish and Wildlife Public Advisory Council, major revisions were made to the 1984 hunting seasons and game hunting regulations, including wildlife management unit and zone boundary changes. A major objective of these revisions was the production of a simplified regulation package while providing maximum recreational opportunities.

A comprehensive review of the wild fur industry was undertaken to ensure appropriate implementation of the Fish and Wildlife Policy for Alberta which was approved in fall, 1982. A preliminary draft position paper was completed and discussions on proposed fur management policies were initiated with the Alberta Trappers Association. The position papers will undergo thorough public review during 1984/85.

A record number of trapper education courses was provided to trappers. Enrolment at these courses remained high. Both the number of trapper compensation claims reviewed (50) and the total compensation paid from the fund ($34 925.74) increased substantially. Wild fur production and prices are shown in Figure 26.

Progress was also made toward completing a draft position paper on management of threatened and endangered species in Alberta.

Twenty-five swift fox were successfully released in Alberta through a reintroduction program involving the Fish and Wildlife Division, the Canadian Wildlife Service and the University of Calgary. Results of this introduction appear positive to date.

A bighorn sheep die-off in southern Alberta

Figure 26

Alberta Fur Production (Wild Fur)

1983/84

	Number of Pelts	Mean Price ($) Per Pelt	Total ($) Value
Badger	1 011	37.09	37 497.99
Beaver	57 537	20.74	1 193 317.38
Black Bear	104	53.52	5 566.08
Bobcat	30	205.00	6 150.00
Coyote	31 445	48.05	1 510 932.25
Ermine weasel	15 828	2.34	37 037.52
Fisher	3 590	128.00	459 520.00
Fox (silver)	61	68.56	4 182 16
Fox (cross)	445	91.52	40 726.40
Fox (white)	11	23.09	253.99
Fox (red)	2 021	45.21	91 369.41
Lynx	3 054	347.27	1 060 562.58
Marten	8 074	49.40	398 855.60
Mink	4 549	26.45	120 321 05
Muskrat	98 819	3.25	321 161.75
Otter	236	37.24	8 788.64
Raccoon	31	18.36	569.16
Skunk	19	4.00	76.00
Squirrel	337 616	1.04	351 120.64
Wolf	494	78.50	38 779.00
Wolverine	49	192.39	9 427.11
Total			$5 696 214.71

SOURCE: Fish and Wildlife Division

NOTE: Above statistics based on records of furs exported from Alberta (Alberta fur only).
Registered trappers: 2 973
Resident trappers: 4 987

triggered a series of investigations into the probable causes. The bighorns died from a bacterial bronchopneumonia. Experiments are underway to determine the possible sources or causes of the disease.

In the nuisance wildlife management area, 1983/84 was highlighted by the completion of a wildlife damage techniques manual for field staff, the initiation of a project to evaluate wolf predation on big game, and production of several reports on skunk and bat rabies control.

Surveys conducted in May, 1983, showed the limited spring run-off from another mild winter provided below-average breeding conditions for returning waterfowl. Comparing the overall provincial breeding indexes for 1983 against the 1973-82 10-year average, mallards went down eight per cent and total ducks were down 18 per cent. Alberta's nesting populations of large Canada geese changed little in 1983, remaining slightly below the average of recent years, mainly because of drought conditions on the southern breeding areas.

Management planning for Alberta waterfowl continued in 1983, with a revised draft of the provincial waterfowl plan circulated for review. The province also became a formal participant in a Canadian negotiating team established to develop strategies to be pursued in joint meetings with the U.S. Fish and Wildlife Service regarding the development of an international waterfowl management plan.

Two five-year cost-share agreements relating to waterfowl depredation were entered into with the federal government in 1983/84. The compensation agreement increased the maximum payable from $50 to $65 an acre, while the prevention agreement will allow for an expansion of the program through additional lure crops, bait stations and scaring areas.

Surveys of upland game birds in spring, 1983, indicated a general decline in the numbers of breeding birds across the provinces. However, weather conditions throughout southern and central Alberta during June (peak hatching time) were generally favorable for chick survival, particularly for gray (Hungarian) partridge, pheasants and sharp-tailed grouse.

In 1983, the development of provincial

management plans for all upland game birds was initiated to improve management of the upland bird resource.

The Brooks Wildlife Centre in 1983 hatched 121 000 pheasant chicks. Of these, 23 000 went out at one-day of age to 4-H clubs, private raisers, and fish and game clubs for the Raise and Release Program. Fifteen thousand chicks left the centre for the six-week Raise and Release Program, mostly to fish and game clubs. The remaining chicks were raised at the centre to provide 1984 breeding stock and 65 000 mature pheasants for release.

During 1983/84, habitat development activities occurred on 32 projects under the Buck for Wildlife program. In conjunction with Ducks Unlimited Canada, the Fish and Wildlife Division has initiated activities on 10 of the 20 wetlands under the Wetlands for Tomorrow program.

A provincial overview assessment of wildlife resource status has been initiated to identify the current supply of populations and habitat in Alberta for several featured wildlife species. A Wildlife Habitat Regions/ Subregions of Alberta map, which depicts 278 ecological landscape units, has been prepared as a framework for conducting these resource status assessments. Habitat Protection Branch provided Fish and Wildlife Division input to various integrated resource plans.

The branch actively participated in the preparation of the South Saskatchewan River Basin Planning Program currently being carried out by Alberta Environment, providing instream flow values to protect the fisheries in the Red Deer, Bow and Oldman rivers. There were significant advances made in 1983/84 in the field of technologies for determining instream flow needs for fish.

Major effort was exerted in addressing water-quality matters in coal development along with Alberta Forest Service and Alberta Environment. The branch also participated in a co-operative study with the Canadian Petroleum Association to determine mechanisms for enhancing fish and wildlife habitats in conjunction with oil and gas development.

The division initiated the development of fisheries and wildlife guidelines for industrial developers.

The Public Information and Extension Branch prepares information on all division functions to maximize public benefit from fish and wildlife resources. Emphasis in 1983 was placed on informing the public about the discussion paper for the new Wildlife Act.

Three 30-second television advertising clips were produced, focusing on enhancing backyards for wildlife, the "use respect" campaign, and recreational fishing. All were well received and proved to be popular and effective.

Wildlife Week activities were expanded to involve the numerous clubs of the Alberta Fish and Game Association. Over 16 000 kits were mailed to Alberta schools, many of which received support from district staff and private sportsmen. A new environmental education program, Project Wild, was introduced into the elementary school system with strong endorsement and support from Alberta Education.

Hunter education continued to expand through volunteer instructors. Currently, 12 000 Albertans, many in the junior high schools, enrol in the division's Conservation Hunter Education program. At the World Scout Jamboree "WJ83" in Kananaskis Country, 8 000 scouts were conducted through a wildlife-hunter education program.

In 1983/84, Fish and Wildlife officers maintained a high quality of public service in the areas of administration of resource legislation, effective response to public inquiries, nuisance wildlife control and public education.

Figure 27

Summary of Occurrences

(Fish and Wildlife Operations/Field Services)
1983/84

	Number	Percentage
Nuisance wildlife	12 102	42.97
Found wildlife	8 536	30.30
Legislation enforcement	5 739	20.37
Miscellaneous	1 792	6.36
Total	28 169	100.00

SOURCE: Fish and Wildlife Division

Figure 27 summarizes the data for the total number of occurrences handled by the Field Services/ Enforcement Section of the division for 1983/84 and indicates an overall increase of 27 per cent from 1982/83.

During National Wildlife Week there was a province-wide visit of approximately 700 schools to increase wildlife awareness among school children. Contact with the public in major population centres was accomplished through displays in shopping malls.

Another major attempt to improve public awareness involved the implementation of new regulations to increase the profile of the Bow River trout fishery. The program involved the preparation of an information brochure, large signs at boat launch sites, newspaper articles and booth displays.

The 1983 special licence and authorization draws for big game hunting attracted 40 786 individuals. They submitted, in combination, 90 127 applications and were issued 7 010 licences and 23 556 authorizations (Figures 28 - 29).

Figure 28

Wildlife Certificate and Game Licence Sales

	Fiscal Year		Fee ($)	Total ($)
	1982/83	1983/84	1983/84	1983/84
Resource development	162 573	162 304	5	811 520
Wildlife certificate	162 573	162 304	6	973 824
Bird game licences				
Resident	87 728	82 634	5	413 170
Non-resident	3 011	2 901	25	72 525
Non-resident alien	900	984	50	49 200
Big game licences (resident)				
Antelope (trophy)	1 997	2 619	20	52 380
Antelope (non-trophy)	1 429	1 556	10	15 560
Bear (black)	14 878	15 276	10	152 760
Bear (grizzly)	964	985	20	19 700
Bow hunting	6 691	7 019	5	35 095
Cougar	121	123	20	2 460
Deer (antlerless mule)	—	—	—	—
Deer (male mule)	—	—	—	—
Deer (general mule)	59 969	61 663	10	616 630
Deer (antlerless white-tailed)	—	—	—	—
Deer (male white-tailed)	—	—	—	—
Deer (general white-tailed)	77 442	78 049	10	780 490
Deer (Camp Wainwright)	761	739	20	14 780
Elk (antlerless)	1 663	1 889	2	3 778
Elk (male)	—	—	—	—
Elk (general)	33 036	34 687	10	346 870
Elk (Cypress Hills)	102	104	20	2 080
Goat	44	46	20	920
Moose (general)	63 971	63 662	10	636 620
Sheep (non-trophy)	792	1 009	10	10 090
Sheep (trophy)	2 863	2 978	20	59 560
Elk (F300)	575	692	20	13 840
Total	684 083	684 223	—	5 083 852
Resident authorizations				
Moose (male)	4 545	4 671	—	—
Moose (antlerless)	1 770	2 287	—	—
Elk (male)	2 520	—	—	—
Elk (antlerless)	3 725	3 134	—	—
Deer (male white-tailed)	450	163	—	—
Deer (antlerless white-tailed)	5 030	4 790	—	—
Deer (male mule)	1 175	1 378	—	—
Deer (antlerless mule)	3 125	7 112	—	—
Total	22 340	23 535	—	—

Continued

	Fiscal Year		Fee ($) 1983/84	Total ($) 1983/84
	1982/83	1983/84		
Big game licences (non-resident)				
Antelope (non-resident trophy)	31	58	125	7 250
Bear (black)	57	46	50	2 300
Bear (grizzly)	—	2	125	250
Bow hunting	12	28	10	280
Guide authorization	299	358	25	8 950
Cougar	1	1	100	100
Deer (male mule) (general)	223	237	75	17 775
Moose (male) (general)	217	211	100	21 100
Sheep (trophy)	4	16	125	2 000
Wolf	2	22	15	330
Deer (male white-tailed) (general)	166	204	75	15 300
Elk (male) (general)	121	210	100	21 000
Total	1 133	1 393	—	96 635
Big game licences (non-resident alien)				
Bear (black)	422	318	100	31 800
Bear (grizzly)	29	55	250	13 750
Bow hunting	47	54	15	810
Cougar	3	4	200	800
Deer (male mule) (general)	158	170	150	25 500
Deer (male white-tailed) (general)	215	235	150	35 250
Elk (male) (general)	175	233	200	46 600
Moose (male) (general)	590	568	200	113 600
Moose (zone one male)	427	374	100	37 400
Sheep (trophy)	87	82	250	20 500
Wolf	30	210	25	5 250
Total	2 183	2 303	—	331 260

SOURCE: Fish and Wildlife Division

Figure 29

Angling and Fishing Licence Sales

	Fiscal Year		Fee ($) 1983/84	Total ($) 1983/84
	1982/83	1983/84		
Resource development	348 150	350 092	2	700 184
Resident angling	343 275	345 265	3	1 035 795
Non-resident (limited)	2 787	2 949	3	8 847
Non-resident (seasonal)	2 088	1 878	10	18 780
Spear fishing	1 101	1 223	3	3 669
Sturgeon angling	557	545	5	2 725
Domestic Indian/Metis	168	169	No charge	—
Fish marketing (Class A)	1	1	100	100
Fish marketing (Class B, C, D)	8	8	10	80
Zone commercial	780	692	50	34 600
Zone fisherman	1 805	1 427	15	21 405
Zone recreational	234	134	5	670
Commercial game fish farm (initial)	8	11	50	550
Commercial game fish farm (renewal)	37	36	15	540
Private game fish farm (initial)	596	583	10	5 830
Private game fish farm (renewal)	964	920	5	4 600
Restricted game fish farm	23	29	5	145
Bait fishing	34	46	25	1 150
Duplicate angling	603	643	2	1 286
Special licence	677	427	5	2 135
Trophy lake licence	4 479	4 864	5	24 320
Total	708 875	711 942	—	1 867 411

SOURCE: Fish and Wildlife Division

Resource Evaluation and Planning Division

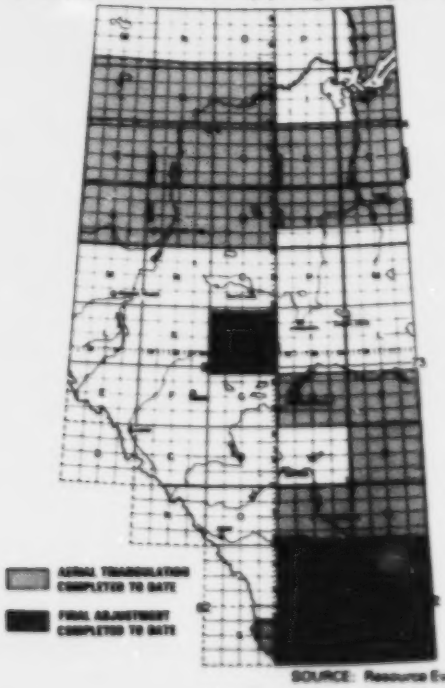
Resource Evaluation and Planning Division (REAP) provides to the department a complete range of aerial photography, resource mapping, resource inventory and appraisal, and integrated resource policy and planning services. REAP also provides intra- and interdepartmental co-ordination.

Demands for resource mapping and related activities increased in all areas. The most important activity was the conversion to and utilization of computer mapping technology. Highlights were the successful completion of the Alberta Forest Inventory Mapping Program (Phase 3), and the on-going development of the Computer Graphics Mapping System (CGMS) from pilot through prototype production, culminating in full production at year end.

Mapping activities were oriented toward the development of a departmental Geographic Information System. A preliminary conceptual design has been developed and several test projects have been identified to produce working models of the system. These prototype projects will be used to test the overall system concept and to introduce the technology to the users.

Digital mapping activities were initiated during 1982 with the acquisition of two interactive graphics systems. Since then, activities have been primarily concerned with initiating the digital 1:20 000 provincial base mapping program and developing the necessary skills and systems design to facilitate digital mapping. The 1:20 000 digital base mapping project is being undertaken by Alberta mapping companies and the Goverament of Alberta. The province is funding and directing the project, and the private sector is collecting data and upgrading its services. The result is the development of a digital mapping industry within Alberta and the execution of the 1:20 000 program in the shortest time possible.

Figure 30
1:20 000 Base Mapping Program



SOURCE: Resource Evaluation and Planning

Aerial triangulation for the 1:20 000 Base Mapping Program has been done through contract (Figure 30). Approximately 4 800 stereo models were measured and, of those, 1 600 were block adjusted. The design phase of the program was completed in 1983/84, including pilot and prototype projects; full-scope production will commence in 1984/85.

The data processing capacity of the two interactive graphics systems has been upgraded to accommodate increasing demands as more department agencies become system users.

Series mapping completed the third year of a five-year plan to update the 1:50 000 Provincial Resource Base Map Series utilizing recently-acquired aerial photography. Twenty-four maps have now been drafted in-house for evaluation purposes and components for an additional 145 maps were drafted on contract by private agencies.

The 1:15 000 Alberta Forest Inventory Mapping Program (Phase 3) was completed on schedule and within budget (Figure 31). This year was the most ambitious and productive year to date: an additional 96 319 square kilometres mapped, 110 139 square kilometre area measured, 224 498 square kilometres loaded into the computer and 230 071 square kilometres finalized and transferred to the Alberta Forest Service. The total area completed under the program was 322 300 square kilometres. Successful completion of this large and important project can be attributed primarily to the department's use of the private sector.

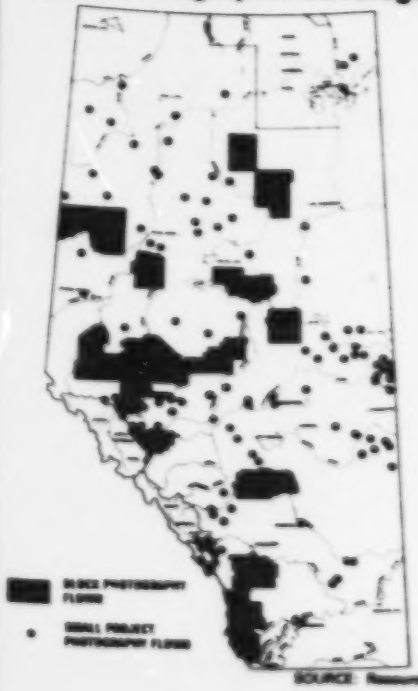
Special purpose maps and brochures were prepared for a variety of clients. Graphics support continued to the Integrated Resource Planning Program, among others.

More than 200 aerial photography projects, at various scales, were completed for a variety of government clients. All projects were procured through contracts with Alberta companies which flew 58 000 line kilometres and produced 25 800 frames of aerial photography. In addition, a contract was awarded to complete the annual small-scale air photo project. The entire province now has 1:60 000 coverage less than five years old (Figure 32). Twenty large-scale

Figure 31
Phase 3 Forest Inventory

SOURCE: Resource Evaluation and Planning

Figure 32
Aerial Photographic Coverage



SOURCE: Resource Evaluation and Planning

topographic mapping projects were completed for a variety of government clients. Approximately 700 square kilometres of township format orthophoto mapping was procured from a contractor.

Within Resource Inventory and Appraisal, physical land and soils classification projects, at various scales, were undertaken and completed for the Deep Basin (83L NTS, north half), Coal Branch and Red Deer-James B6 areas. An integrated resource inventory team approach was used. There was substantial participation in the contracted Peat and Peatlands Research Pilot Project designed to recommend an inventory (classification) scheme for Alberta. Physical land and soil classification work is on-going for the Berland, Alberta Sand Dunes, Bear River-Wapiti, Lac La Biche/ McClelland and Dog Creek areas. Several small projects were also initiated and completed, including work on terrain sensitivity.

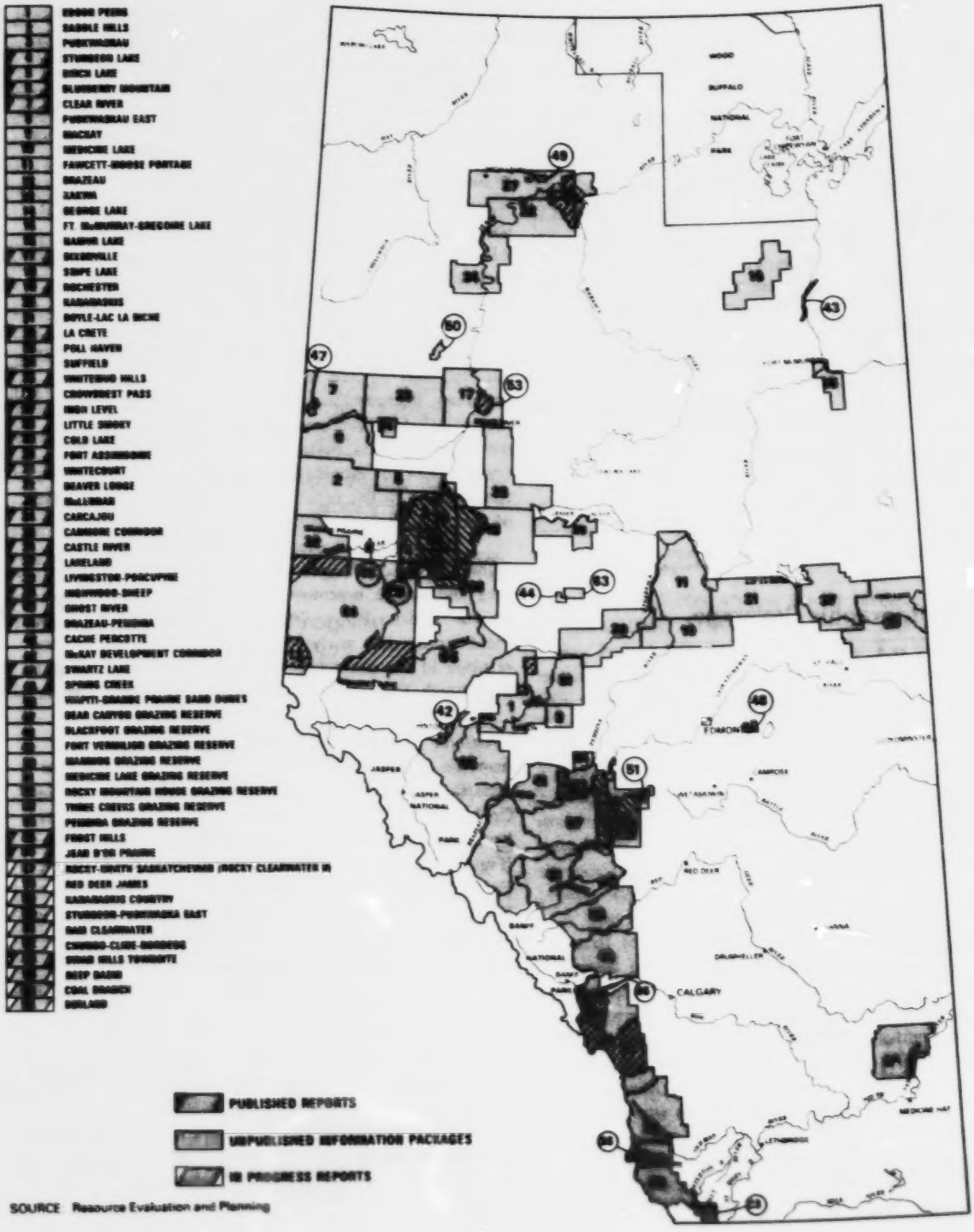
A wide variety of biological inventory data was gathered and 13 312 square kilometres of forest inventory interpretation completed at a scale of 1:15 000, thus concluding the interpretation component of the Alberta Forest Inventory Program. Field work concentrated on the Hinton-Robb area with data analysis contributing to the report, An Ecosystem Classification of the Coal Branch Area.

The permanent plot establishment of the forest Stand Dynamics Project concentrated on the Swan Hills area and forage inventories were undertaken in the Grande Prairie (83L), Coal Branch and Berland areas. Field work, data analysis, mapping and report writing resulted in the completion of vegetation information for the Grande Prairie (83L, north) and Coal Branch study areas.

Ecological land surveys were provided for the Integrated Resource Planning Program and for other resource development planning areas. Ecological land classification reports concentrated on the Wapiti-Berland, Coal Branch, Chungo-Cline-Nordegg, Ram-Clearwater, Kananaskis Country and Sturgeon-Puskwaskau areas (Figure 33). A special report on the shorelines of the Cold Lake region was completed for Alberta Environment. The Climate Inventory program operated two year-round agroclimatic networks in the Green-Yellow area fringe of the Peace River regions to determine growing potential (High Level-Fort Vermilion and the Sturgeon-Lesser Slave Lake areas). Another network operated in co-operation with Fish and Wildlife Division to monitor the winter climate of a number of caribou habitat sites in the Muskeg River area north of Hinton and has been closed off this year. An additional network is being developed in the Cadotte Lake Area. Completed climate data management system provided the capability to analyse and map the High Level-Fort Vermilion network.

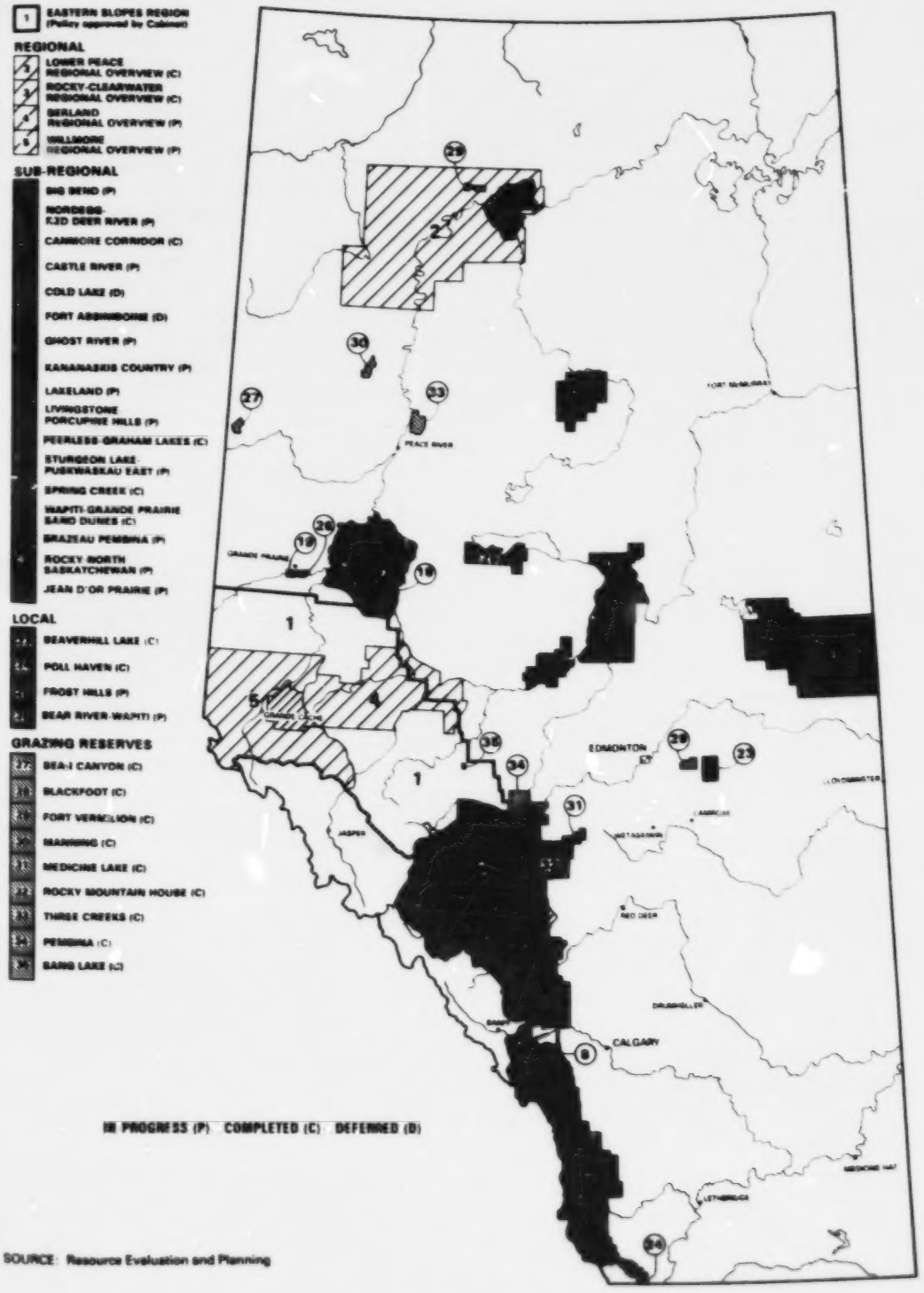
Figure 33

Ecological Land Classification and Evaluation Reports



SOURCE: Resource Evaluation and Planning

Figure 34
Integrated Resource Planning Projects



SOURCE: Resource Evaluation and Planning

Two major on-going contracts with the Alberta Research Centre (ARC) continue: the Provincial Aggregate Inventory and the Coal Evaluation Program. The aggregate inventory interpreted six map sheets (1:50 000) along the highway corridor between Edmonton and Edson/Hinton. Detailed work (1:50 000) was done, on request, in the counties of Red Deer and Stettler. Reconnaissance investigations were undertaken in the Wapiti map sheet (NTS 83L, 1:250 000) with added attention given to the proposed highway between Grande Cache and Grande Prairie. The supply/demand report on projected consumption and depletion of sand and gravel resources in east-central Alberta is in preparation.

The Coal Evaluation Program involved drilling for Phase 2 of the ARC Coal Geology Project. Twenty-four holes were also drilled in the Brooks region of southeast Alberta to help delineate the major areas of high-quality coal within the Belly River Group. Field studies on the coal geology of outcrops of the Belly River Group and Horseshoe Canyon Formation are now complete and results have been incorporated into two field guidebooks. A paper describing the subsurface distribution of coal of the Upper Horseshoe Canyon Formation is being printed. The data collection phase of a subsurface study of the lower Horseshoe Canyon Group has been initiated. As a result of a reorganization of the coal geology program, work is being done on a team basis to facilitate faster completion of reports.

The Natural Resource Information Directory was again produced, and distributed to a larger number of government and private users. Numerous entries were added and/or updated. The directory provides an index to natural resource and land-related information for Alberta.

Resource Planning Branch co-ordinates the preparation of integrated resource plans, including public involvement. It also provides review and referral services by co-ordinating departmental comments on a wide range of matters.

The branch co-ordinated 15 major integrated subregional plans, two regional plans, three regional situation appraisals and the study of several major policy issues (Figure 34). The branch continued its co-ordination role in the administrative review of A Policy for Resource Management of the Eastern Slopes, and A Coal Development Policy for Alberta. The branch co-ordinated 40 referrals and was responsible for the review of one environmental impact assessment and 18 planning documents referred by the Alberta Planning Board.

The branch continued the development and implementation of its major public involvement program. Four plans underwent comprehensive public review with complex programs initiated on the remainder.

The Alberta Integrated Planning Advisory Committee entered its third year with several new public groups represented. The Resource Planning Branch provided service to the Resource Integration Committee, which the branch chairs, with staff participating in a number of other committees.

Regional co-ordination services were well established in the Peace River Region, Athabasca and Northeast Region, and the Eastern Slopes, Southern and Central regions. Through interdivisional co-ordination, regional resource co-ordinators are to effect integration in all phases of public land and resource management including program development and integrated resource planning. Each regional resource co-ordinator is a member of the Regional Resource Management Committee which provides communication links for the department, other agencies and the public.

Alberta Bureau of Surveying and Mapping

Alberta Bureau of Surveying and Mapping co-ordinates all government surveying and mapping activities, develops and maintains standards, gives comprehensive coverage of the province, and distributes aerial photographs and maps. In this field, the bureau is the primary contact for the Government of Canada, municipal governments and the private sector. It also chairs the Interdepartmental Committee on Surveying and Mapping. The Surveys Act, Land Surveyors Act and Boundary Surveys Act are administered by the bureau.

The bureau provides a geographical positioning framework for the province suitable for use by government departments and the private sector in the integration of position-dependent land-related information, provides a standardized mapping system for the province suitable as the basis for display of position-dependent land-related information, and co-ordinates and facilitates the development of a network of land-related information systems to create an environment which promotes and fosters the sharing of information among members of the public and private sectors.

The Land-Related Information Services (LRIS) Group was transferred to the bureau from Alberta Treasury. Its major accomplishment was to structure and enhance the Network Concept Plan. This design phase culminated in a technical review workshop attended by individuals from the academic community and private sector with LRIS expertise and experience.

The planning and creation of a provincial survey control network continued. Under the management of the Survey Control Branch an additional 76 000 square kilometres of the province were added to the network, resulting in the creation of 508 new Alberta Survey Control markers. The program of installation of high-density survey control in urban municipalities saw an additional 831 new markers. Included were two new projects in Oyen and Crowsnest Pass. This program is now complete for 55 urban and one rural municipality (Figure 35).

Figure 35
Municipal Survey Control

The municipal survey control program is now completed for 56 municipalities:

12 Cities

Calgary	Fort McMurray	Lethbridge	Red Deer
Camrose	Grande Prairie	Lloydminster	St. Albert
Edmonton	Leduc	Medicine Hat	Wetaskiwin

43 Towns:

Airdrie	Cold Lake	Magrath	Spruce Grove
Black Diamond	Crowsnest Pass	Morinville	St. Paul
Bonnyville	Drayton Valley	Okotoks	Stettler
Bow Island	Fort Macleod	Olds	Stony Plain
Brooks	Fort Saskatchewan	Oyen	Taber
Canmore	Grand Centre	Peace River	Turner Valley
Cardston	Grande Cache	Picture Butte	Vegreville
Carstairs	Hanna	Pincher Creek	Vermilion
Claresholm	Hinton	Ponoka	Wainwright
Coaldale	Innisfail	Raymond	Whitecourt
Cochrane	Lac La Biche	Rocky Mountain House	

1 Rural Municipality: County of Strathcona

SOURCE: Alberta Bureau of Surveying and Mapping

Programs to preserve and maintain the land survey system are managed by the Land Survey Branch. Under this program, 600 township corner ties to survey control markers were completed under contract to private survey companies in 28 project areas. This is also in support of the 1:20 000 base mapping program. The branch also created an automated Land Survey Data Base (on an electronic medium) to record all provincial geographic positions of land survey points computed for the municipal and provincial mapping programs.

The Mapping Branch, in conjunction with Resource Evaluation and Planning Division, devoted significant effort to the joint planning of the 1:20 000 mapping data base for provincial mapping (Figure 36). Research and development in the areas of interactive graphics, automated plotting and data management were maintained in this past year. The scope of the Geodigital Mapping System was expanded to include preliminary applications work on provincial mapping programs. In addition, 1 005 pen plots were contracted to private industry.

The retail value of all goods distributed to the public and other departments of government decreased by approximately eight per cent from the peak levels in 1982/83. Negotiations for acquisition of distribution rights to federal mapping products neared completion, with the goal to reach agreement by March 31, 1985.

Figure 36
Map Production

	1982/83	1983/84
1:1 000 series		
Number of cadastral maps completed (digital)	669	922
Number of manuscripts completed	1 237	1 279
1:5 000 series		
Number of cadastral maps completed (digital)	18	69
Number of orthophoto-line maps completed	32	57
1:20 000 series		
Number of maps completed (manual)	63	40
Number of maps completed (digital)		20
1:250 000 series		
Number of maps completed (manual)	78	187
Number of maps completed (digital)		52
1:750 000 series		
Number of maps completed	195	70
1:1 500 000 series		
Number of maps completed	21	17
1:2 000 000 series		
Number of maps completed	25	33
1:5 000 000 series		
Number of maps completed	100	92
Thematic mapping services		
Number of bases supplied	1 093	674
Number of graphs, charts and forms completed	60	63

SOURCE: Alberta Bureau of Surveying and Mapping

Foreign Ownership of Land Administration

Foreign Ownership of Land Administration is responsible for the administration of the Foreign Ownership of Land Regulations, and the Land Agents Licensing Act and Regulations.

Figure 37 shows the amount and value of controlled land acquired by foreigners under various exemptions or exclusions from the Foreign Ownership of Land Regulations in each fiscal year for the past three years.

Figures 38 - 40 give a breakdown of the controlled land acquired by foreigners in 1983/84 by soil class, country of origin and municipality.

Figure 41 shows the amount and value of controlled land acquired in 1983/84 by permanent residents (landed immigrants) by country.

Figure 37
Area and Value of Controlled Land Acquired by Foreigners
By Year

	Hectares	Value[a] ($)
1981/82	6 811	54 387 865
1982/83	2 325	22 598 034
1983/84	2 508[b]	30 232 125

SOURCE: Foreign Ownership of Land Administration

NOTE: "Controlled land" is defined in the Foreign Ownership of Land Regulations as any land outside the boundaries of a city, town, village or summer village. It does not include Crown land or minerals. "Foreigners" include ineligible persons and foreign-controlled corporations as both are defined in the regulations.

[a] These values are based upon the "assurance fund" values placed on the land by the buyer or seller upon registration of title at the land titles offices.

[b] Of this figure 1 328 hectares were estate settlements, 67 hectares were parcels under eight hectares, 463 hectares were acquired under foreclosure orders, 254 hectares related to agreements entered into prior to the regulations coming into force, 331 hectares were for industrial and resource developments, 65 hectares were acquired under court orders for the benefit of a spouse or children.

Figure 38
Area Acquired by Foreigners by Soil Class
1983/84

Soil Class	Hectares
1	67
2	665
3	390
4	402
5	880
6	8
7	95
Organic	1
Total	2 508

SOURCE: Foreign Ownership of Land Administration

Figure 39
Area Acquired by Foreigners by Country
1983/84

Country	Hectares
United States	2 215
England	251
Germany	35
France	5
Holland	1
Singapore	1
Total	2 508

SOURCE: Foreign Ownership of Land Administration

Figure 40

Area Acquired by Foreigners by Municipality

1983/84

		Hectares
County		
1 Grande Prairie		72
9 Beaver		17
12 Athabasca		1
14 Lacombe		61
16 Wheatland		158
20 Strathcona		83
21 Two Hills		259
25 Leduc		23
26 Lethbridge		128
27 Minburn		15
28 Lac St. Anne		22
30 Lamont		64
31 Parkland		31
	Subtotal	934
Special Areas		
2 Hanna		32
3 Oyen		130
	Subtotal	162
Improvement Districts		
8		1
14		6
16		64
17		196
19		1
21		1
23		129
	Subtotal	398
Municipal Districts		
6 Cardston		60
31 Foothills		10
44 Rocky View		597
47 Starland		2
48 Kneehill		4
52 Provost		113
90 Sturgeon		33
133 Spirit River		194
136 Fairview		1
	Subtotal	1 014
	Total	2 508

SOURCE: Foreign Ownership of Land Administration

Figure 41

Area and Value of Controlled Land Acquired by Permanent Residents

1983/84

Country	Hectares	Value* ($)
United States	5 037	9 250 561
Germany	2 740	7 414 041
Holland	1 911	5 147 255
Switzerland	1 178	1 931 383
England	891	4 957 951
Denmark	439	528 255
Norway	386	280 000
Ireland	327	590 500
Czechoslovakia	253	350 873
Northern Ireland	165	542 846
Sweden	143	280 000
Scotland	136	607 000
Poland	134	422 200
Italy	121	619 423
Yugoslavia	81	300 000
Australia	66	253 903
Austria	66	157 000
Belgium	65	216 200
Philippines	62	55 000
Turkey	54	6 000
New Zealand	37	158 150
Chile	32	29 000
South Africa	15	399 643
India	8	208 667
Trinidad	3	70 000
France	2	80 000
Greece	2	36 000
Bahamas	2	127 000
Iran	2	3 500
Fiji	2	37 345
Bermuda	1	30 000
Wales	1	6 800
Other countries	8	246 000
Totals	14 370	35 342 496

SOURCE: Foreign Ownership of Land Administration

NOTE: "Controlled land" is defined in the Foreign Ownership of Land Regulations as any land outside the boundaries of a city, town, village or summer village. It does not include Crown land or minerals. "Permanent residents" essentially means persons who have obtained landed immigrant status in Canada. The regulations do not restrict acquisition of controlled land by permanent residents.

* These values are based upon the "assurance fund" values placed on the land by the buyer or seller upon registration of title at the land titles offices.

April of 1983 saw the publication of the Reference Manual for Alberta Land Agents. This manual was prepared by the Land Agent Advisory Committee (made up of experienced land agents and landowners) with the assistance of this division and ENR Public Affairs. More than 1 600 manuals have been sold or distributed to land agents and other interested parties throughout the province and in other jurisdictions as well.

During the summer of 1983, examinations — based largely on the manual — were administered to all land agents in the province who were required to pass the examination in order to retain their licences. The examination requirement resulted in a significant reduction in the number of licence holders. Figure 42 shows the number of land agent licences active at the end of each fiscal year for the past three years.

Figure 42
Total Number of Land Agent Licences Issued

Month	Fiscal Year			Interim Licences	
	81/82	82/83	83/84	82/83	83/84
April	40	10	—	—	2
May	43	5	1	2	2
June	39	—	—	4	4
July	22	—	2	5	6
August	25	—	11	3	4
September	34	—	—	6	5
October	32	—	2	3	8
November	31	—	3	10	8
December	41	—	1	1	7
January	12	—	1	5	2
February	39	—	1	3	3
March	32	—	1	4	3
Total newly issued	390	15	23	46	54
Renewed	517	376	363	Nil	1
Cancelled or expired	324	1 810	744	Nil	31
Active	2 831	1 412	1 054	46	70

SOURCE: Foreign Ownership of Land Administration

NOTE: Effective April 21, 1982, all new applicants for a licence are first issued an interim licence which they hold for a 12-month period under the supervision of a licensed land agent. After a satisfactory supervision period and upon successful completion of the land agent examination, a land agent licence is issued.

3

Finance and Administration

Report of the Asscciate Deputy Minister

M. F. Kanik, Associate Deputy Minister, Finance and Administration
C. A. Graff, Assistant Deputy Minister, Mineral Revenues
E. K. Barry, Assistant Deputy Minister, Finance and General Services
C. E. Barnicoat, Executive Director, Systems Planning and Development
T. M. Collins, Director, Personnel Services
G. A. Ford, Director, Internal Audit

The Finance and Administration Sector, in addition to the direct support services provided to the Energy Sector and the Renewable Sector, is responsible for ensuring the adequacy and appropriateness of the legislation and controls relating to the revenues due to the Crown for Alberta's energy and natural resources.

During 1983/84 significant progress was achieved in co-operation with the petroleum industry in improving the effectiveness of the legislation and the efficiency of the administrative systems through which the provincial mineral revenues are controlled. At the same time major internal changes required to keep pace with the increasing complexity of the energy sector were initiated.

Two major computerized systems were implemented in the Renewable Sector during the year: the Timber Records Enumeration and Evaluation System and the Land Status Automated System. The first phase of the Land Status Automated System is an innovative and powerful tool for the management of Alberta's land resources. Further development of the system is projected to have similar benefits for non-renewable resources.

Considerable effort has been directed toward the creation of revenue producing opportunities for both government and the petroleum industry, chiefly in the in situ oil sands agreements and incentive programs for conventional oil. At the close of the fiscal year, three in situ oil sands agreements were waiting final execution.

The Finance and Administration Sector fulfils its responsibilities through five divisions: Mineral Revenues, Finance and General Services, Systems Planning and Development, Personnel Services, and Internal Audit.

Mineral Revenues Division

Mineral Revenues Division is responsible for the calculation, collection, verification and reporting of petroleum, natural gas, coal and other royalties. The division also administers and collects freehold mineral taxes. Royalty, mineral tax and crude oil export revenues for the fiscal year were $5.14 billion, an increase of $291 million over 1982/83 (Figure 43).

Mineral Revenues also administered two industry incentive programs. The Oil and Gas Servicing Incentive Program and the Development Drilling Incentive Program, both effective May 15, 1983, have been concluded.

Responsibility for the Oil Royalty Exemption System incentive program was assigned to the division with the program's creation, April 1, 1984. It was created to encourage more intense oil exploration and increased economic benefits for oil producers than previous programs, by enlarging the categories of eligible wells.

Work began in early 1983 to design and create the Mineral Revenues System (MRS), a computerized data base with associated output programs. When complete, it will enable the division to perform its tasks in a more comprehensive, efficient and timely manner. The first major component was completed in March, 1984, while development of the others is continuing. In conjunction with MRS, the division has also begun making extensive use of microcomputers and microfilm. Both are seen as necessary to improve resource allocation and productivity.

On June 6, 1983, the Freehold Mineral Rights

Figure 43
Comparative Mineral Revenues

	1982/83 $ Million	1983/84 $ Million
Royalties		
Crude Oil	2 340	2 883
Natural Gas and Products	1 873	1 694
Coal	14	11
Oil Sands	362	304
Quarrying, Mining and Other	3	2
	4 592	4 894
Mineral Tax	156	160
Crude Oil Export Charge	101	86
Total	4 849	5 140

SOURCE: Mineral Revenues Division

Tax Act received royal assent, replacing the Freehold Mineral Taxation Act. The new legislation applies to 1983 and subsequent taxation years. It assesses mineral taxes on the basis of value of production, unlike the former method which was based upon fair value of remaining recoverable reserves of oil and gas. The new taxation system is more equitable to mineral title owners, and is more easily understood and administered. An information package for the public about the new act and assessment method was prepared.

Oil sands royalty agreements received considerable attention. The division is responsible for the creation of Crown royalty agreements for a number of new in situ oil sands projects which include Esso Cold Lake, BP Wolf Lake and Amoco Elk Point. All await final execution, but satisfactory progress has been made as the intricacies of each are addressed.

The Gas Royalty Branch has developed the Gas Royalty Administration Proposal (GRAP) in concert with industry. The proposal will streamline procedures used by producers and Mineral Revenues in the reporting, calculation and collection of natural gas royalties. The principles will be incorporated in the MRS systems development, with implementation scheduled for January, 1985, royalties.

The division has conducted several industry seminars on specific topics with the assistance of representative industry groups. These meetings improved communications and understanding between the division and industry, and will continue. In addition, Mineral Revenues had sought industry's opinions about legislative, policy and procedural changes before implementation. Such discussions are viewed as beneficial in curbing uncertainty and complexities that characterize and affect Crown energy revenues.

Mineral Revenues began a massive internal reorganization, a measure viewed necessary to improve efficiency and remain current with the changing complexities of its functions. The general goals are to consolidate similar positions, create specialist positions and take a more pro-active approach to the division's responsibilities. The complexity of the task has required the assistance of the Personnel Services Division and the Personnel Administration Office.

Under the National Energy Program, Alberta is entitled to half the export charges levied on Alberta crude oil exports since November, 1980. Procedures for determining the province of origin of exported heavy oil were negotiated among the Governments of Alberta, Saskatchewan, Manitoba, British Columbia and Canada. The province was represented by Mineral Revenues in these negotiations.

Finance and General Services Division

Finance and General Services Division provides services to all of the department in accounting, financial planning, records management, office services and drafting.

The Financial Planning and Control Branch is responsible for the overall improvement of financial information and control procedures within the department. The branch contributed to the increased efficiency of the department by developing and distributing the Financial Policy and Procedures Manual and distributing the Contract Users Manual. Seminars for field staff were then conducted on the importance of understanding and using the manuals.

Minor revenue fees were reviewed for their appropriateness. Numerous other projects were carried out with the majority resulting in improved efficiency for all divisions.

The department's accounting responsibilities are carried out by the Financial Accounting Branch. These include invoice processing, revenue control, asset accounting and financial reporting.

Records Management made significant progress with file system standardization, integration of surface and sub-surface file areas, conversion of the central file area to lateral filing, and the implementation of a computerized information control system.

The Security and Emergency Measures unit concentrated on creating an awareness for the safeguarding of personnel, property and information. Twenty-one seminars for 311 employees were conducted. In addition, 15 buildings were surveyed, resulting in upgrading of physical security. The emergency evacuation program has been introduced to 14 buildings.

The Accommodation and Support Services Section provided office and telecommunications services. The stationery and supplies warehouse operation was enhanced by an automated inventory and billing system.

The Crown Land Registrar's Section served the

department, other government agencies and the public through the registration of legal documents for mineral agreements and surface dispositions. Progress was made toward the review and consolidation of fees, and the creation of regulations supporting the Crown Land Registrar.

Systems Planning and Development Division

Systems Planning and Development Division provides technical expertise and capabilities in the areas of automated data and word processing systems to all divisions and programs of the department.

The division is developing a Mineral Revenues computer system. The first release of the Mineral Tax Subsystem was completed and was used for the production of 1983 mineral tax statements in March, 1984. Work on the Oil Royalty Subsystem also started and will continue. Further activities planned include a second release of the Mineral Tax Subsystem, a Gas Royalty Subsystem and a Management Reporting Subsystem.

A computer system to monitor payments for the Oil and Gas Servicing Incentive Program was developed and implemented. The system enabled the incentive program to identify duplicate charges, removed the need for several temporary staff, met the industry and government deadlines and generally facilitated timely and accurate management reports.

The Alberta Bureau of Surveying and Mapping acquired a mini computer-based Intergraph System to replace its obsolete system. (Intergraph is a computer-aided mapping/drafting system.) The computer is compatible with two other Intergraph systems in the department as well as making the bureau current with its equipment and technology.

A computer graphics mapping pilot program was developed. The pilot demonstrated a graphic system involving all the resource-based divisions of the department for a small area of the province.

The first release of the Land Status Automated System (LSAS) was completed and implemented. The system provides automated land status for surface dispositions. The remaining three releases of LSAS are yet to be developed.

Releases 1, 2 and 3 of the Timber Records Enumeration and Evaluation System (TREES) were completed and implemented. Release 1 deals with enforcement, local timber permits and financial information. Release 2 concentrates on forest management agreements and timber production control, while commercial timber permits, timber operations control and seizures are covered in Release 3. Additional releases are yet to be implemented.

A mini computer was installed for the Alberta Petroleum Incentive Plan (APIP) in Calgary. Several of APIP's systems have been installed on this machine.

Personnel Services Division

Personnel Division provides services to the department in recruitment, classification, wage and salary administration, employee relations, staff training and development, and occupational health and safety. These services are provided through offices in Edmonton and Calgary and the Forest Technology School in Hinton.

Employment levels within Energy and Natural Resources were reduced to 2 618 permanent positions and 300 project positions. In addition, approximately 2 500 individuals were employed on a casual, seasonal or temporary basis for up to six months. The department continued to participate in the temporary job creation programs sponsored by Alberta Manpower. Opportunities were offered to: 186 individuals through the Priority Employment Program (PEP); 176 individuals through the Summer Temporary Employment Program (STEP); 58 individuals through the Employment Skills Program (ESP). In conjunction with the Edmonton school system, the department participated in the Work

Experience Program, providing 31 students with work experience.

A total of 336 recruitment competitions was held. The need to reduce employment levels in the department required that employees whose positions were eliminated be considered for other openings in the public service. As a result, there was a significant increase in the use of limited and departmental competitions.

This past fiscal year saw new program development and implementation in a number of personnel and payroll areas. As a result of the evaluation conducted in the previous year, two new programs were developed: Orientation and Wage Employment. The Orientation Program welcomes and introduces new employees to the department. The Wage Employment Program assists supervisors with administrative documentation procedures for payment of wage employees. These programs were evaluated and results indicated both were meeting employee and organizational needs.

A high level of activity was maintained in the training area. Existing programs were evaluated and several changes made. In looking into employee needs, a need for short refresher courses was identified. Two programs were developed and presented to department supervisors: Interviewing Techniques Seminar and Performance Appraisal Seminar. The response was positive and such refresher courses will continue to be considered as supplements to the in-house training programs. The structure for the Management Development Program was established. This program is intended to recognize and develop individual managerial skills. When fully developed, it will assist the department by ensuring a wider selection of qualified personnel to manage departmental programs better.

The Occupational Health and Safety Program produced a Safety Information and Policy Manual, a safety orientation pamphlet and a five-year Safety Plan. The department's safety record has improved significantly. There were only 254 work-related injuries at a cost of $496 555 in compensation benefits, down from last year's 524 work-related injuries costing $764 083. The number of days of work lost because of injury declined to 1 997 from 3 160.

The Forest Technology School continued to offer the second year of the Northern Alberta Institute of Technology's Forest Technology Diploma Program and provide specialized courses to the department and outside agencies. The school also increased its utilization 26 per cent as a result of providing a broader range of in-service courses for department personnel. The kitchen and dining areas were extensively renovated.

A highlight of the school's activities was the inauguration of the Rappel Training Program and the helitak course for forest-fire suppression. Both are used for initial forest fire control. Rappelers lower themselves from helicopters to the ground whereas helitak crews land with the helicopters. Eight helitak crews, two with rappel capability, graduated and were used during the fire season.

Internal Audit Division

Internal Audit Division provides assistance to all members of management in the effective discharge of their responsibilities by furnishing them with analyses, appraisals, recommendations and comments. Objectives and plans for the year were completed with the exception of two major audits which were rescheduled because of unanticipated computer system studies and heavy workload.

While financial activities will continue to be important, more emphasis has been placed on reviewing programs to ensure results are consistent with objectives. Major computer-based systems are being examined to determine whether controls are adequate, user needs are being met and the systems are achieving their objectives.

The following audits were completed: 38 field locations, four major financial audits, 22 special management reviews, six electronic data processing (EDP) systems. One major management audit was started. Deficiencies revealed by earlier audits were surveyed to ensure corrective action was implemented. Private-sector firms of chartered accountants were used again, mainly in auditing of grants to ensure compliance with objectives and conditions. This enabled staff to spend more time on activities unique to the department.

The three-year audit program, a blueprint of future audit operations, has been updated in consultation with divisional management. It addresses the needs of the department and provides management with an operational overview.

4

Department Revenues and Expenditures

Alberta Energy and Natural Resources Statement of Revenue

for the year ended March 31, 1984
(with comparative figures for the year ended March 31, 1983)
(Unaudited)

(Thousands of Dollars)

ENERGY	1983/84	1982/83 (Restated)
Royalties		
Crude Oil	$2 883 099	$2 339 841
Natural Gas and Products	1 694 091	1 873 369
Coal	10 786	13 950
Oil Sands	303 830	362 339
Quarrying, Mining and Other	1 887	2 665*
	4 893 693	4 592 164
Rentals and Fees		
Petroleum and Natural Gas	79 495	85 351
Oil Sands	6 503	9 476
Coal	3 567	4 387
Other	209	199*
	89 774	99 413
Crown Sales, Petroleum and Natural Gas Agreements	486 981	336 500
Mineral Tax	159 953	155 899
Crude Oil Export Charge	85 776	100 712
Gross Revenue (Energy)	5 716 177	5 284 688
Less Incentive Credits		
Exploratory Drilling	39 919	83 750
Geophysical	33 978	37 557
	73 897	121 307
Net Revenue (Energy)	5 642 280	5 163 381

Continued

RENEWABLE	1983/84	1982/83 (Restated)
Taxes, Licences and Fees		
Fish and Wildlife Royalty and Taxes	139	153
Fishing Licences	1 704	1 704
Game Licences	4 494	4 421
Landman Licensing Fees	32	34
Forest Technology School Fees	345	315
Timber Dues and Fees	16 795	10 978
	23 509	17 605
Leases and Permits		
Cultivation Leases	1 217	930
Grazing Leases and Hay Permits	3 936	3 636
Public Land Leases and Permits	774	1 041*
Right to Access	4 923	4 430
Sand and Gravel	1 055	1 453
	11 905	11 490
Provincial/Federal Government Agreements	705	647
From Revenue-Producing Assets	1 309	1 295
Sale of Assets		
Homestead Sales	858	629
Land Sales	2 170	13 141
	3 028	13 770
Miscellaneous Revenue		
Survey, Plans, Maps and Aerial Photography	308	297
Other	954	1 788*
	1 262	2 085
Total Revenue (Renewable)	41 718	46 892
Departmental Total Revenue	$5 683 998	$5 210 273

* See Note 1.

Prepared by Financial Accounting Branch
Finance and General Services Division
September 10, 1984

Alberta Energy and Natural Resources Statement of Expenditure**

for the year ended March 31, 1984
(with comparative figures for the year ended March 31, 1983)
(Unaudited)

(Thousands of Dollars)

	1983/84	1982/83
Departmental Support Services — Program 1		
1 Central Support Services	$ 1 643	$ 1 462
2 Financial Services	9 508	9 507
3 Administrative Support Services	7 933	4 627
4 Policy and Advisory Services	21 238	17 475
	40 322	33 071
Resource Evaluation and Planning — Program 2		
1 Program Support	642	588
2 Resource Evaluation	12 019	11 023
3 Resource Planning	1 067	914
	13 728	12 525
Minerals Management — Program 3		
1 Mineral Resources	102 797	44 869
2 Mineral Revenue	5 479	5 254
3 Oil and Gas Service Industry Incentives	92 053	250 155
4 Financial Assistance for Alsands Project	—	2 083
	200 329	302 361
Forest Resources Management — Program 4		
1 Program Support	29 819	31 596
2 Forest Land Use	6 370	6 154
3 Reforestation and Reclamation	8 321	8 122
4 Timber Management	8 871	16 332
5 Forest Protection	36 177	88 671
6 Forest Research	974	1 810
	90 532	152 685
Public Lands Management — Program 5		
1 Program Support	5 021	4 397
2 Land Disposition	2 379	2 081
3 Land Management	11 002	11 597
	18 402	18 075
Fish and Wildlife Conservation — Program 6		
1 Program Support	3 777	5 924
2 Wildlife Services	5 354	4 338
3 Fisheries Services	4 663	3 594
4 Field Services and Operations	9 056	6 436
5 Public Information and Extension	1 135	1 173
6 Habitat Protection Services	1 165	2 626
	25 150	24 091
Oil Sands Equity Management — Program 7	845	795
Foreign Ownership of Land Administration — Program 8	344	291

Continued

	1983/84	1982/83
Surveying and Mapping Services — Program 9	10 397	8 146
Alberta Petroleum Incentives Program — Program 10		
Administration	8 386***	6 554
Gross Expenditure	408 435	558 594
Less Expenditure Recoveries		
Alberta Petroleum Incentives Program	8 287***	6 554
Other	1 386	1 153
	9 673	7 707
Net Expenditure	$398 762	$550 887

** See Note 2.
*** See Note 3.

Prepared by Financial Accounting Branch
Finance and General Services Division
September 10, 1984

Alberta Energy and Natural Resources Notes to the Financial Statements

for the year ended March 31, 1984

Note 1 **Comparative Figures**

*The 1982/83 figures have been restated where necessary to conform to the 1983/84 presentation.

Note 2 **Statement of Expenditure**

**Alberta Oil Sands Technology and Research Authority and Alberta Petroleum Marketing Commission are not included in the Statement of Expenditure.

Note 3 **Statement of Expenditure**

***Costs incurred of $99 440, not related to the Alberta Petroleum Incentives Program, have been eliminated from the transfer from the General Revenue Fund.

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